The Builder.

VOL. XXXI.—No. 1612.

The Masters' Federation and the General Welfare.

THE pen was just dipped to write a word or two of Christmas counsel and greeting, when the expression "the national federation of employers" fell upon our ear.

We cannot conceal the fact that this phrase has cost us no small amount of inquietude. We are not for a moment about to assume that the respectable and eminent men, whose names are cited as forming the council and supporters of the federation, are actuated by any motives but that of "supporting that which is for the common good, and steadily opposing that which is adverse to industrious interests." Such names as those of Salt and of Crossley, of Akroyd, Ashworth, and Marshall, of Hannen and Trollope, are sufficient to prove that such is the real object of the organisation. Nor are we about to be guilty of the impertinence of advising the council how to do their own work, or suggesting that they may at all be likely to drift from their proposed course. Nor, lastly, can we at all say that there has not been, even within the twelvemonth now near its conclusion, ample warning to the employers of labour that they should look anxiously and keenly to their position.

But thinking and writing, as we trust we always do, not for a class, but for a brotherhood of classes, we cannot but point out to our respected friends who now take the title of a "federation," what appears to us to be an element of no small danger in the scheme. It is a question of Flag. We have lately seen how such a question may be, in point of fact, decisive of the destiny of a nation. Not that a Flag is, in itself, more than what Bonaparte said "the throne" was, "three bits of wood and a bit of velvet." But it is the expression of a policy, and of more than a policy,—the expression of a conviction. And when a Flag is once raised, it soon becomes more than a symbol. It becomes a power. It rallies round it all classes of supporters. Anon it becomes necessary to lay down certain lines, to abandon certain positions, to enforce others,—in a word, to define such a line of policy as shall enlist the greatest number of supporters; and to carry out the common object of the mass of those supporters by imposing a stern discipline on the whole party. The compensations and graceful concessions to opposite opinions, that form the very oil of the social machine, are excluded by this process. Thus a committee, a council, or a federation, becomes a machine which may, no doubt, be very powerful, but which works with a high degree of friction.

The danger in the present case we take to be rather in reaction than in action. It is not so much to the programme of the Federation that we refer, as to the effect that the programme may have on the other members of the great industrial partnership,—the owners or makers of labour. Our main object, since first the press gave wings to our words, has been to promote the union of masters and men, to show the solidarity of living and of stored-up work, to increase the harmony of the capitalist and the labourer. With this view we have ever protested against association on the part of the workmen being cast into such a form as should be likely to lead to war; still more against any association expressly organised for the purpose of war. With the same object in view, we have to urge on the employers of labour the propriety, and the true wisdom, of carefully avoiding anything that may look like an organisation of class against class, or the repulse of a danger by a menace.

We have, it is very likely, in these columns referred more than once to certain facts connected with the industrial history of Europe that have profoundly struck us, in the course of professional visits to various parts of Europe. They are facts that cannot be too widely known, or too attentively contemplated. We refer to the certain evidence, which is afforded by the cities of different parts of the Continent, of the former existence of a great industrial prosperity, followed by a great ruin and collapse. This evidence is afforded by long streets, or wide quarters, of closed, tenantless, decaying houses. In some of the great cities of Belgium, the spectacle first hung upon us like a nightmare. It is now some years ago, and matters may have altered for the better. But Bruges, if memory does not fail, offered one of the most conspicuous examples of monuments of a past and half-forgotten energy. In Bordeaux, once one of the main seats of commerce, we have counted whole streets of tenantless houses. In Brindisi, once the Liverpool of the Roman Empire, the decrepit, desolate, unoccupied houses appeared to form the majority of the buildings. And what, in these cases, is matter of local decay, in Portugal may be observed as evidence of national decay. Nowhere, not even in Italy itself, can be seen such marks of stately power, and of unbounded wealth, as in Portugal. That ancient kingdom was our precursor and pattern in opening the world to the merchant. Her ships first doubled the Cape. Her sons were the first, or among the first, to circumnavigate the world; and in due reward for the untiring energy of her sailor prince, and her enlightened monarchs, "the exhaustless East"

"Pour'd in her lap all wealth in teeming showers."

The monasteries, churches, and palaces of Portugal show a lavish and well-directed outlay of wealth, to which it is hard elsewhere to find a parallel.

What is Portugal now? We need only ask the inquirer to walk through Lisbon in order to reply. There the ruins caused by the earthquake of 1755 yet stare us in the face. Since the time of the great Minister Parabal, the desolation of a proud, helpless, utterly ignorant idleness seems to have enwrapped his country like a mist. Have these things no lesson for us? Is our prosperity necessarily more eternal than that of the great centres of ancient industries in the Low Countries? Is our commerce more indestructible than that cradled and nursed by the care of the great Prince Henry of Portugal?

The effect on the mind of such scenes as we have mentioned we take to be this. They show us, more plainly than mere language can do, the fleeting, transitory, perishable nature of manufacturing and commercial prosperity. They point, by recent and familiar examples, the same moral that is taught by the nameless desolations of the mighty cities of the East, by the shapeless heaps that mark the sites of queenly Babylon,—that great centre of commerce, of which the power and influence were so widely spread, that we yet weigh our gold and silver in Babylonian grains, and measure, there is some reason to believe, our Ordnance triangulation, not only by Babylonian angles, but in Babylonian feet.

It is only a feeble and unpractical mind that can experience such a shock as a visit to one of the scenes we have cited is calculated to give, without seeking for some cause, at once explanatory of what has passed, and fraught with counsel for the future; and wherever we can trace it, the cause of the loss of power and wealth can generally be traced to the relaxation of the ties that should bind society together, as in one golden hoop. Even where foreign conquest has applied the torch which has wrapped city and shrines in common destruction, that conquest has for the most part been invited by civil discord. The history of Europe is full of the lessons how, by that very municipal spirit which, to a certain extent, was the very spring of modern civilisation, were developed party interests, class interests, personal interests, which tore to pieces the garments, nay the very limbs, of the mother country. And it is an action of this nature which we so much dread for Great Britain.

We hold that to be a very false view, either of religion or of history, which regards labour as a curse. On the contrary, it is not only the common lot of man, but also the school of all that is great in man; and the splendid triumphs of physical and mechanical science which distinguish the present age have for us this noble function, that they tend to remove from labour all that lowers or brutalises the labourer, at the same time that they increase the labouring power to an untold degree.

With this new instrument given to mankind,—with the ever-new and ever-surpassing services of that "drudging goblin," the steam-engine,—new views as to the *status* of the labourer are becoming more and more clearly understood. It has been very fully pointed out by a writer in the *Edinburgh Review*, in a notice of Mr. Thomas Brassey's valuable book, "Work and Wages," that we have to reconsider many of our old-fashioned assumptions as to work and the workman. Looking at the thing from the lowest stand-point, it does not *pay* to over-drive the labourer. Good food, good clothing, good lodging, or, in another word, good wages, are found to be indispensable to produce good work. Of course, the thing may be overdone; but the main idea is, that there is a certain rate of pay, and a certain amount of time which the labourer employs in work in the course of the year, which will produce the largest economic result. As an abstract statement, this cannot for a moment be denied. Then comes the practical question, where does this limit lie? and experience goes to prove that it lies considerably higher than we have been in the habit of taking for granted. It is more remunerative to the employer (provided the labourer conscientiously does his best) to pay somewhat higher, and to demand a somewhat shorter time of work in return, than we have, until very recently, considered to be the case.

The reign of mere capital, if we are not much mistaken, has reached, if not passed, its apogee. The school of Adam Smith has done good service, in its time, in calling attention to the power of capital, and to the advantage which the labour of to-day may derive from the wise application of the fruits of the labour of the past. But there are signs abroad that the most thoughtful men of the day are taking a great stride in advance of this time-honoured position. The power, rather than the rights of labour, is that to which the attention of the producers of labour is now directed by their wisest friends, and with the best promise of good results. Not the power of idleness, or the power of obstruction, but the fruitful, creative power of the human arm, hand, and brain. Further, it is becoming daily more and more evident that the principle of association, if fully acted on by the working classes, is one that must greatly modify the power, and probably the existence, of capi-

talists as a distinct class. If this new set of the tide is taken intelligently and honestly into account, it will be well for the honest and industrious man, whatever be his industry. Further, if this be really the set of the tide, it will be as idle to attempt to withstand it, as for Mrs. Partington to try to mop up the Channel.

No individual in history, ancient or modern, has done so much to imperil the reign of great capitalists as the late Emperor of the French. His Government has done this in two ways,—direct and indirect. Directly, he set the example of appealing, in the first place, to the mass of the people, for the loans called funded debt. Louis Napoleon had the opportunity (it is not every ruler who has, or who could profit by it if he had it), of knowing how very little great capitalists actually *do* for any sound financial operation, with the exception of drawing a large profit from it. Having the credit of France to draw upon, he thought it hardly necessary to give Rothschild or Perière 10 per cent. for merely endorsing his bills. The enormous success of the popular appeal for *Rente*, inaugurated in the later years of the Empire, is well known. The importance, and also the facility, of the association of small savings, for a public object, was thus proved. We are not asserting that it is a good thing for a Government to have great facility for raising money. Our opinion is to the contrary. But, when a public loan is required, we have been thus shown that the direct appeal to those from whose pockets it must ultimately come, is both the surest and the cheapest method.

The indirect blows given by the latter year of the empire to the power of capital have been no less severe than this pointed attack. The great scandals connected with great financial names; the collapse of great credit establishments; the fatal Mexican war, originating in a "financing" speculation, and culminating in the fall of the empire, and in the court-martial of the Trianon; these have been amongst the blows to which we refer.

Now, although it is an old bit of wisdom which remarks that by-standers see more of the game than do the players, we are not to suppose that great signs of the times such as those to which we have called attention are unobserved by prudent and foreseeing men, both among the capitalists and among the working classes. And those thoughtful persons will be disposed to agree with us in the opinion that we are now at, or fast approaching to, a point at which the onward path divides into two; and we must take it either to the right hand or to the left. Either we shall go on, under the influence of the spirit which closed the Welsh coal-mines at the beginning of the present year, to a gradually increasing difference and antagonism between employers and employed; or we shall take a turn in the other direction towards a true harmony and more intimate solidarity between the two. The former course, if unhappily persevered in, will tend to much ill blood, much suffering, and much advantage to the foreigner at the expense of the English workman. It will check our industrious development, paralyse our commerce, and finally sweep away the capitalists, as a class, from this country, without any resulting advantage to the labourer.

On the contrary, if we take warning by what others have suffered, and by what we have hardly ourselves escaped, we shall draw together the bonds of the social order; and we shall find master and man begin to look at their mutual relations in the light of a wise partnership, rather than in that of a sharp bargain.

We think that, by due consideration, the federation of employers of labour may play a not inconsiderable part in the good work. We have little doubt that, unless it do so, it will, in spite of itself, become an influence in the opposite direction: a cause of strife, rather than a source of harmony.

Not to be vague, and thus of little practical aid, in the advice we venture to offer, we will indicate plainly what we mean. We think it essential to produce the results at which all good men should aim, that the Federation should give pledges of the truly catholic and national object of the association in two ways,—one by their programme, and the other by their composition.

As to the programme, there is a principle which they may inscribe on their banner without fear of raising any opposition, save from the designing and the bad. Let that principle be,—the independence of labour and the sanctity of contract and of law. Let the compact between master and man be freely entered on,—freely by both parties; and when once entered on, protected by all the vigour of the law. Those who terrify or seduce the workman, who dispose of his energies at their command, and prevent him from selling them to the best market, are the real enemies of society. We do not care whether they wear fustian jackets, but hold out hands unhardened by the honest stamp of labour, or whether they dwell in mansions and recline in luxury. We do not care whether they are stump-orators or "books in breeches,"—mere thinking-machines. Those who step between master and man, save to draw them together in strong Christian brotherhood, are the enemies of both, the enemies of labour, the enemies of wealth, the enemies of England.

Then, in carrying out this national and industrial programme, the Federation would at once take a great stride in public acceptance by associating with them some genuine representatives of labour. Not any of those who have come before the world, soft-handed, as we before hinted, as the "labourers' friends," but, as representing the class from which they spring,—men who, from humble origin, have attained great wealth. It is not our province to point out individuals; but we will indicate the direction in which we are looking. In November last we cut out from a paper, sent with the report of a certain railway meeting, an account of the operation of a co-operative industrial coal and iron company, in the North of England. It was the third annual report; and after paying 5 per cent. on all the capital employed, the directors divided, for the half-year, a bonus of 2½ per cent., and included the further entry "to the payment of the qualified workmen and *employés* of the company of a bonus in proportion to the return of the capital embarked in the several departments." Of this thoroughly respectable enterprise we know no member or associate. We observe that a City financial paper calls attention to the fair earning of 10 per cent., not on paper, and not out of promoters' pockets. It is from the leaders and organisers of sound-working schemes like these,—enterprises for which the capital is found in the pockets of the workmen themselves, redeemed from the tithe of the publican and from the "salary" of the paid agitator,—that we think the members of the Federation will do well to look for that popular element which shall prevent them from coming before the world in the guise of an exclusive class organisation.

Since our remarks were on paper, we have observed, in the columns of the most widely circulated of the daily papers, observations which, though not anticipating our own, coincide very fully with them. The *Times* appears to be as fully aware, as we ourselves have been, of the danger of a "Federation" proving a source rather of discord than of unity. It has directed its remarks chiefly to the subject of some of those legal measures (such as the penalties against conspiracy, picketing, and the like) in which opposite views are advocated by some of the employers of labour, and by the great masses of the labourers themselves. In all such questions, however, it must be obvious that any steps which tend to clothe the Federation with something of the nature of a court of arbitration,—which enable them to speak, not in the interests of capital alone, but in those of industry, fed and supported by capital,—would convert its character from that of a possible engine of party warfare into that of a promising organisation for general accord, and for the promotion of the national welfare.

BRICK ARCHITECTURE.

The order given by the Egyptian taskmasters to the Israelites, is in substance echoed just now by some active professional practitioners,—"they say unto us, 'make brick'": in other words, there seems to be a decided leaning in certain quarters towards the employment of brick, not as an economical substitute for, but in preference to, stone. Whether this is the consequence or the cause of some of the studies that have been directed to the architecture of countries where brick is necessarily the staple building material, it is not very easy to say; we should be inclined to think it is rather the former. We have studied and more or less imitated, or adapted, most varieties of European work of the great architectural epoch, so far as style is concerned; and a material hitherto comparatively little used in high class architecture among ourselves, but which in some countries has been so almost exclusively employed as to give its own decided stamp and character to the architecture embodied in it, seems to promise a further change, and suggests new combinations of old things. The discussion which has taken place thereupon is indicative, along with other things, of the wish to find some degree of novelty of architectural expression in the revival or transplantation of some of the feeling of an essentially brick architecture.

From one point of view, certainly, it might be urged that we can have no need to go to other countries to study this class of architecture, when we have a brick architecture, pure and simple, so peculiarly our own, omitting notice of earlier work in this material, filling so many leagues of our streets with its unadorned neatness, and rising to something of monumental grandeur and dignity in the masses of warehouse and factory, to be found in different parts of the kingdom; heaps of bricks, as Fielding somewhere observes, piled up as a kind of token or monument, that heaps of money had been piled first. It is all very well to sneer at the "hole-in-the-wall style," but it has at least been a great fact; it is the expression of the sole and comprehensive idea of thousands, we might say millions of people, as to the possibility of architectural expression in the exterior of city, and even of many country, homes: it represents, in one point of view, the readiest, simplest, and most economical way of using a material which can be formed into unlimited numbers of cubes of exactly the same size and proportion; and its merits in its palmy days have attracted the commendation, the sympathetic admiration of a very eminent modern philosopher.* It has the quality, specially characteristic of the grandest production of the art, unity and breadth of style; like the Doric temple, it achieves effect by a repetition of similar features; and any section of it, taken separately, is, as a composition, complete in itself. The researches of modern architectural critics, however, are tending to throw contempt on this chaste and severe style of brick architecture, and drawing our attention more and more to the effects produced in other countries by moulded bricks, and tracery, and other *tours de force* of this kind, in burnt clay, from which we may draw wholesome lessons and precedents for transplantation to our own streets and squares.

If we go beyond the pure English style of brick design alluded to, we may distinguish these stages or manners in the employment of the material, two of which have already received considerable illustration in this country. There is the brick and stone style, the coloured brick style, and the moulded brick style. The first, vulgarly known as brick with stone dressings, is indigenous, and in many cases is, in fact, merely the substitution of brick for stone in the unornamented parts of the structurre, for the sake chiefly of economy; though it may be accompanied by a certain amount of "treatment" of the brick, by the introduction of lines or crosses of darker brick on the orthodox red brick ground. Though this is an imitation in brick and stone of a masonic style, rather than a distinct style, it has, nevertheless, a character of its own, and in old houses especially, where the conflicting brick and stone elements have been toned down by time, it is capable of very pleasing effect. But in more recent times this method of combining the two materials has been the medium for all kinds of architectural commonplaces and vulgarities. It affords a means of getting what is supposed to be an architectural effect at a reduced cost from that of stone, and is eminently useful in the production of the kind of dwellings or shops called "handsome" or "respectable," as the degree of stone embroidery is more or less profuse. It is especially disagreeable when carried out with those staring, cold-looking yellowish bricks, which are the bane of so much modern town architecture; and at the best, the system of combining brick and stone in this way produces patchwork, takes away entirely the homogeneous character of a building, and gives it a kind of put-together cabinet appearance, with what we have heard called the "architectural features" added and framed into the rest. It would be possible to use brick and stone together in a much more architectural way than this, making a basement of the one and superstructure of the other; for instance, instead of putting the stone in after a carpenter and joiner's

* See Carlyle's appreciative remarks as to the quality and appearance of the bricks in the older Chelsea houses, and elsewhere, in "Shooting Niagara."

fashion, to make jambs and architraves to windows and doors. The coloured brick architecture is, as far as this country is concerned, of modern origin, or rather importation. As carried out here, it is distinguished by great flatness of treatment, and a frequently violent opposition of strongly-coloured patent brick; though lately there have been attempts to realise more delicate harmonies by the combination of stone of suitable tints. The style is, in fact, the importation here of a manner of architectural treatment arising not unnaturally in a southern climate, where there is plenty of light to bring out distinctions of tint, and where material of rich and delicate tints (marble) could be procured, either to be used alone, or to combine with and harmonise the more raw hues of brick and tile work. We have not the same facilities here. We have been smitten with "the brick and marble architecture" of Italy, and have transplanted it, *minus* the marble, into an atmosphere where we have only two things to choose between in the treatment of external colour; either to make it very unpleasantly stray at first, or to see the effect obliterated by weather in a very short period. The coloured brick style, when the buildings are new, gives certainly a variety to our town architecture, and does not there clash with the sense of association; but it quickly loses its effect. In the country, on the other hand, the style is an anomaly, not harmonising with the colour or with the sentiment of the landscape. The value to us of the introduction of this style is for interiors, where it can be treated more delicately without danger of losing its effect so soon; though even here it needs to be handled with a delicacy and refinement, in regard to choice and arrangement of tone, too often absent.

The genuine brick style, what we before called the moulded brick style, is that which has naturally and of necessity been developed in countries where the builders were obliged to trust to this as the only material available in any large quantities for realising their designs. Like the timber style of Norway, the brick style of Pomerania and some other regions of northern Europe is the genuine outgrowth of the necessities of the case. It is the attempt to do in brickwork what in other countries other Mediæval workmen accomplished in the grander and more plastic material, stone. And few things in the history of architecture are more interesting and more characteristic than the monuments left by builders contending with restricted materials, but determined to produce with these what effect they can. Like all styles formed in this natural and unaffected manner, the brick architecture of northern Europe is marked by a character at the same time distinct and homogeneous, and directly the result of the peculiarities of the material. Imitated in stone, the features of such a building as the Marien Kirche at Stralsund would appear for the most part anything but attractive; its unadorned spaces of wall would be bare and cold, its ornamental features thin, wiry, and starved looking. Recognise, however, the character and limitations of the material, and all this is changed, and the design comes out as a suitable effect and picturesque achievement.* Nothing could more forcibly illustrate the *relative* nature of architectural design, and the extent to which the intellectual capacity, the reason, is appealed to by it, as well as the eye. It is noticeable, too, that the satisfactory effect fails where the material is strained to do what it cannot satisfactorily accomplish, as in the effort to build up long lines of mullion in such a material as moulded brick. Conversely, the long pilasters, the square turrets and pinnacles in the Pomeranian brick style, which in that style appear as a satisfactory and characteristic treatment, would, if carried out in stone, appear simply bald, the material being capable of so much more rich and free treatment.

Regarding this last as the true brick architectural style, in which the material is made use of to produce purely architectural effects of composition, surface ornament, and light and shade, through the means of moulding and arcading, but with its own peculiar manner suited to the exigencies of the material; the question then becomes, how far is it desirable, in a country where there is no lack of good average building stone, to carry out and enlarge upon a style which in reality expresses the absence of stone, and only came into existence on account of that absence? If anything like an imitation of the North German style were attempted, it would almost certainly be a failure; for it would be a deliberate putting of himself into fetters by the architect, who should be content to use an inferior and cumbrous material when he had better ready to his hand. Among our stone-yielding districts a building dependent entirely on brick is an anomaly. On the other hand, what we do learn from this brick architecture, among other things, is the value of homogeneous material and treatment, rather than patchwork of a better and a worse material. Brick architecture should be purely brick, architecturally speaking, and aim at brick effects and treatment, and not be dependent on extraneous stone features to make it pass for architecture. And where circumstances are such that it really will enable us to realise an architectural effect and feeling more economically than stone, as in neighbourhoods where the stone of the district is poor or in small quantities, there will really be a valid reason for employing the artificial material; for there can be no doubt then as a mere material, in regard to tone and colour, and even finish and durability in mouldings and ornaments, good brick is better than a soft and inferior stone. Such cases, however, are exceptional in this country; otherwise, a development of pure brick architecture here must be the result of a wish to obtain a new source of effect, something which our more usual ornamental building materials cannot realise. That this is possible with brick there is no doubt; but not *economically;* any brick building, to realise architectural effect of a high order, is likely to cost as much, or more, in time and workmanship, if not in material, as stone. Whether it is worth while to try experiments of this kind will depend entirely upon the way in which architecture is regarded. If we preserve the utilitarian theory, and regard a building as a necessary erection, to be set up of the most suitable and procurable materials, and with them made to look as picturesque as possible, brickwork can only retain its place in the very plain class of buildings it has hitherto chiefly been used for; anything beyond that will be best built of stone. If we regard architecture more as an ornamental art, in which we can take any material we like, and fashion it to suit our tastes, that is another thing, and it may be an interesting experiment; but the cases in which this view can be acted upon are not many; public architecture is for the most part indissolubly bound up with public economy, and experiments therein cannot be honestly or successfully made, to any but a very limited extent.

Where brickwork is to be used in architectural design, however, it must be observed that at present we are, in a second sense, in the position of "Israel in Egypt"; for "there is no straw given unto us,"—the material for the highest class of brickwork is not forthcoming; and even the need of a larger or a smaller brick than ordinary, for special purposes, requires something little short of an act of Parliament to produce the article. Perhaps a little experimentalising in brick design might at all events have the good effect of forcing our brick manufacturers a little out of their usual groove, and helping to demonstrate that there are more ways than one of using a material of this kind.

* While referring to the Stralsund Church, notice the treatment of the apse, with the half windows next the angles, the crown of the arch adjoining the pier, instead of the springing. This looks at first sight contrary to all our habitual ideas on architectural design, yet it is, in fact, a simple and effectual way of doing away with outward thrust at the external angles of the apse, in a style where buttresses would be out of keeping.

SHALL ALL THE NATIONS BE ALIKE?

IT must often have been a subject of wonder as to how it has come to pass that no scientifically disposed person has as yet got to work and written a book on the what may be termed *aspirations* or *dominant ideas* of the leading nations of the world at each particular epoch. For instance, what was it that filled the thoughts of men as a predominating idea in the old patriarchal days? What was it in the times of barbarism, and barbaric pomp and glitter? What in the Dark Ages? Might not a philosophic history of the world's *mind* be got out of such a method of search and treatment and inquiry as this? There might be a good deal of difficulty in it, and a good many doubtful things, and it might puzzle sometimes the very keenest of historians to find out what it was that most filled men's minds at any certain and defined era. But nowadays in these centres of civilisation there could be but little trouble in the finding out of the master-thought of the time, or that which the most intelligent and influential majority are best agreed about and most eagerly desire to do. We are concerned here with the broadest possible and most general thoughts, and are led to a thought about them by the present goings on in modern civilised Europe. It is not only *within* the special province of fine art and architecture, but is really and indeed at the very foundation of them. It is a wide subject, and asks for a little gathering together of all one's knowledge, acquired sometimes with no small difficulty, but is well worth a little trouble to come at even dimly as events go on in the wide world.

If it be difficult, and we will allow this, to get at the main motive of the older dominant ideas in each age, it certainly is not so to see what in the main constitutes the one of to-day. If we might venture to give it a name which should generally characterise it, it might be "amalgamation" or the *unification of countries*, and of men, and of arts. If there be any one aspiration more certain than others of commanding universal assent from "societies," the press, the pulpit, and the general instinct of the public mind of civilised Europe, it is that of a hope and a firm belief that in time, and in no long time, all the nations of Europe, and indeed of the world, will come together and be as one, and follow the lead of the most powerful and dominant nation. All things about us help this idea. Railways practically bring distant places together. Telegraphs enable people to talk to each other across whole continents and wide seas. A sort of universal and general knowledge is gradually spreading everywhere, and a kind of "model education" is in course of being perfected which must in time include everybody, from the Bacons and Newtons of the world to the street arabs and *gamins* of its capital cities. All this is in progress, be it observed, and is not the mere hope and fancy of a future. There is also, and it is, as all know, one of the great hopes of the future, a general dissemination of what are called general or "universal principles" of fine art tending to bring all art-styles together, and to elicit out of them, if possible, a sort of universal art-language. Free trade and unrestricted commerce help this not a little, for the shop is a universal necessity of civilised life, and what is good for one place must needs do for another, if but the people in it and about it can be induced to adopt it and make proper use of it. Nothing, indeed, can well be more delightful and cheering than this thought of a universal coming together of countries, arts, and peoples; the savage "civilised," the barbarian civilised, or, what is a better word, "Westernised," and the civilised man more and ever more *educated*.

But—we say *but*, for it is quite a necessary word in all this bright prospect,—it is to be noted in the first place that this thought, though so essentially modern, and so full of the railway and the telegraph and *book* education, is not so new a one as many might think; for, strange to say, it was one, if not the chief, of the wonderful activities of Alexander the Great to not only *subdue* the whole earth by force of arms and force of will, but to "*Grecianise*" it as well. He, like the modern man, wanted to bring the whole earth together and to make all one, and to dominate all with a Greek sceptre. If there ever were in the world, and he might be well excused for thinking it, a people perfect enough to form a model for the whole of the rest of humanity, it certainly was the all but perfect Greek. Form, presence, face, manners, grace, fine arts, architecture, language, all went together to make up as perfect a whole as can well be conceived; and Alexander, with the magnificent Persian at his feet, might well be excused for hoping to accomplish the task of making all the rest of the world like it,—to make the whole world "Greek." But he did not and could not do it. Let us grant that the ancient Greek, as we may yet see him, was a well-nigh perfect man, and that his surroundings, as his architecture and his other fine arts, were quite worthy of himself; who is there, we may ask, that would wish to see *all* the world Greek, or even all Europe at the present day Greek? Nothing but Greek architecture, Greek sculpture, Greek impress everywhere, and nothing spoken but the Greek tongue? A glorious unity it must be confessed, but who would ask for such perfection of sameness? And if this be so, what are we to think of a dominant ascendancy of any one of the *present* leading nations—a domination,

be it observed, going to the root of everything, and compelling all things to be alike?

Be it observed that we are not supposing merely things as they might be, but are speaking of things as they are now going on, and "progressing," and perfecting themselves. To cite but one proof of it, not only is the fine-art and architecture of all civilised Europe growing alike by slow degrees, but the several individual details of it are actually manufactured in the same places, and even cast from the same moulds. It is really not a little difficult to conceive how any one can,—in an artistic sense,—come to think there can be "art progress" in such as this. *Commercial* progress there may be, but not art progress; for this system can but serve to make all buildings precisely alike. Invention, style, individuality of treatment, nationality, and all else that can constitute diversity and artistic interest, must needs disappear under such a system of production. There are doubtless advantages in it, but are the advantages at all commensurate with the disadvantages, and the hindrances to a real and a true art advancement and to artistic interest? It cannot surely be so. All this may be, as we may doubtless be told, inevitable, and in the nature of things; but can it be said that it is favourable to the individuality and *nationality* of fine art and architecture? And art and architecture, and all that hangs on it, are, after all, the great material proofs of what is called progress, and advanced civilisation, and high culture!

We are led to these thoughts by more than one or two things that are at the present moment going on in the world, and under the highest auspices and inspirations.

The great and dominant nations of the world are driving all before them, whether they are driven well or not. The old world conquests, such as those of Alexander, were as nothing in point of influence and lasting energy as compared with modern "*occupations*." Alexander advanced into the very heart of the great continent of Asia, and then turned back, declaring that there were no more worlds to subdue; but when turned back he left all as he found it; he bore away the spoils, may be, of the great and wonderful cities he overcame, but he left them as he found them. The conquered inhabitants must have remembered him, as men remember vaguely a distempered dream; but they could have borrowed nothing from him, and he could have taught them nought. Their special individualities remained. Art, language, manners, modes of life remained as they were before the visitation, neither better nor worse. But how different a modern conquest, or "occupation," to use a favourite and conscience-quieting phrase, such as that, for example, of the Russian advance into Central Asia, or the British occupation of India. The more satisfactory and the more complete it is, the more perfectly and entirely is the nationality of the place occupied put aside, and a something else put in its place, better in some ways, it may be, but still individuality is displaced, and so far destroyed. There was surely nothing so strange and almost mysteriously attactive in the old world as the *isolation* of its great nations, and their separation and distinctness. Arts, manners, customs, languages, their races of men, buildings, all and everything, was different; almost as in different worlds. Nature would seem, as it were, to be trying her hand at inventing and working out different and distinctive individualities. The Greek and the Jew, the Egyptian and the Assyrian, the Gaul and the savage Briton were all unlike each other as their several architectures as we now see and wonder at them in museums and in ruins. The men of each country differed, as did their several quaint, or beautiful, and graceful costumes, and in passing from one to another, as, doubtless, many an old pilgrim and trader did, it must have seemed to such like the passage from one into a new sphere of existence. Borrow from each other they sometimes, doubtless, did, but there really was no need of it. Every nation seemed to be equal to its own special work. But now-a-days all is changing; the whole drift and spirit of the time is well epitomised by the railway; the more even and level it is the better, and the great effort is to reduce all to a level. The Russian in Northern Asia, and the Briton in Southern Asia, imply not simply conquest but *occupation*,—the negation of things Asian. The great "Asian mystery," which attracts Mr. Disraeli so much, and so often, and has confounded others, is after all but a simple affair in the future; for the Asian must disappear, if not in actual person, at least in speciality and individuality in exact proportion to the "progress" he is compelled to make.

In thus hinting at these thoughts on the fate of primitive art and individuality, and at their certain amalgamation, or destruction, as we might rather term it, we cannot but be struck with one special though slight indication of national feeling on the part of some few of those, to us, strange men who now represent the great individualities of the past. We hear now and then, in faint enough tones, may be the very voice of Asia, not only present in this age, but really as coming from the ages that are gone. A dim consciousness of their own value, and the power there must be in their own individuality, seems to come over them, even after "education" has done its work, and almost transformed them into new beings. Is it, indeed, the great Asian mystery that fills the minds of such men almost unconsciously, or is it only after all the natural affection which all distinct and individualised races of men *must* sometimes feel for their own past history? Arts and architecture, and language, and, may we add, costume and manners, are surely worth the preserving and developing; for other things may be developed surely besides Westernism. There are, at least we hope so, even in Central Asia, other shops, and shop-fronts, different from those you may buy ready made in London, waiting only the fixing, compounded of all styles, and belonging to none. Surely there must be more in the individuality of nations and distinct races of men than such implies, and certain it must be, that to elicit the strength and "art power" of a distinct race of men, it is, and must be, necessary, that they work out their own ideas with their own hands, and out of their own minds, aided by their own past history, and "art precedent."

THE CRYSTAL PALACE SCHOOL OF PRACTICAL ENGINEERING.

The first year, and the third term, were brought to a close on Saturday, by the presentation in the lecture-room of the school, of the certificates awarded to students; Mr. J. W. Bazalgette, C.B., C.E., presided, and presented the certificates. Before this was done the numerous visitors had an opportunity of inspecting the work of the students in the drawing-office, in the pattern-shop, in the foundry, and in the fitting-shop. The course of instruction embraces one term in the drawing-office, one in the pattern-shop and foundry, and one in the smiths' fitting and erecting shop. The students that have attended each of the three terms have now accordingly taken the complete course. It is much to their credit that, as a substantive result of the year's instruction and training, they should among other things be able to show at work, and working smoothly and well, a 3-horse power steam engine that has been produced entirely in the school workshops, excepting only the castings that were too large for the capabilities of their little foundry. These, however, were received in the rough condition, and were finished and fitted by the students, who produced also all the drawings, and made the whole of the patterns. A number of drawings, the work of the students, each accompanied by specification, statement of quantities, and estimate, were shown in the drawing-office. The subjects included elevation, details, and estimates for a wrought-iron roof of 40 ft. span.

Mr. Bazalgette, before presenting the certificates, spoke in terms of praise of the school as well entitled to the name it took of being practical, and estimated highly the value of the theoretical instruction combined with practical training of which the students had the advantage.

Mr. Shenton read the report of the examiners, Messrs. W. Pole, F.R.S., C.E., and J. Imray, M.A., C.E.

Certificates were awarded for merit in the students' papers, "On materials and their manufacture," and for merit in the drawing-office, the pattern-shop, or the fitting and erecting shop. For merit in their papers, the students were allowed marks, the highest number they could reach being 232. Of twenty-nine students in the school, eighteen presented themselves for examination on their papers, and twelve of these received double certificates,—one for the merit of their papers, and another for the excellence of their work in the drawing-office, the pattern-shop, or the fitting shop.

Mr. P. W. Britton, with 225 marks for his papers, was second in the pattern-shop; Mr. J. H. Frogley, 223 marks, first in fitting-shop; Mr. R. J. Symonds, 202 marks, first in drawing-office; Mr. J. K. Lorimer, 174 marks, first in pattern-shop. The other students that received double certificates were Messrs. H. C. Dent, W. Michels, S. H. Hampton, E. Smith, G. Harris, W. H. B. Green, A. Wortham, and E. Green. Single certificates were awarded for drawing, to J. T. Brickford, C. S. Smith, and R. de Jaurequi. For work in the pattern-shop, H. F. E. Tompson, and E. W. W. Waite. And, for work in the fitting-shop to A. Saubergue, F. J. Jones, E. W. Rees, F. Maurice, J. Day, and H. S. Fitzgerald. The examiners conclude their report by expressing their great satisfaction with the progress of the students, and with the sound practical system of instruction and training adopted by the Principal, Mr. J. W. Wilson, C.E.

In acknowleding the vote of thanks accorded to him, Mr. Wilson stated that the students had answered four questions upon each of eighty-three lectures that had been delivered to them, or 332 questions in all.

Professor Pole, one of the examiners, on being called upon by the chairman, bore high testimony to the value of the school, and the efficiency with which it was conducted by Mr. Wilson. He considered it an admirable preparation for entrance to an engineer's office.

Votes of thanks to the chairman, the examiners, Mr. Wilson, and Mr. Shenton, closed the proceedings.

A NEW DANGER TO ARCHITECTS.

Sir,—The position of the architect in the present day is not an enviable one. Although as regards material prosperity it cannot be denied that, individually, architects have participated to a great extent in the prosperity that has attended the trade of the country during the century, it is at the same time indisputable that their influence as a body has decreased, and that their *status* with the public has declined rather than advanced of late years. For this anomalous position of the profession, and the want of recognition of architecture as a liberal art, it would be perhaps unfair to blame the public, the fault lying rather with the architects themselves, who are for the most part disinclined to enforce a compulsory system of education, as has been adopted by other professions, or to set up a standard by which the qualified practitioner might be distinguished from the charlatan. This is a question of too wide a range to be discussed in a few words, and I have no intention at present to reopen a controversy which has been virtually decided by the representative body of British Architects, in a sense intended to promote the interest of its members. I merely allude to this point from a desire to avoid including in my enumeration of the disabilities under which architects labour any burdens they have imposed upon themselves, or which they have not endeavoured to remove from their shoulders.

It is to be borne in mind that the profession of an architect never was at any time a recognised profession, in a legal sense, in this country. No certificate or diploma was ever issued to the architect to enable him to practise, and yet his position (in England, at least) was, until the commencement of this century, as clearly established, and his position as recognised, as that of a member of any other of the liberal professions. I do not forget that, occasionally, the architect suffered rebuffs, as when Wren was displaced by Denham, or when Kent, originally a painter, monopolised the patronage of the nobility in all matters connected with art. These, however, were accidents, due in the one case to intrigue and political jealousy, and in the other to the protection of a nobleman who had acquired a reputation which enabled him to dictate to the fashionable world upon questions of taste. The so-called Gothic revival, although it certainly did much to advance the study of architecture, as certainly contributed to degrade the architect in the public estimation. The writings of those eminent men by whom this important revolution was mainly effected invited us to regard the architect as merely a master mason, or clerk of the works; while the emphasis that was laid upon the necessity (or it might almost be said the sufficiency) of the study and admeasurement of Mediæval buildings, led people to believe that the comprehensive view of the education necessary to the architect which had been insisted

on from Vitruvius downwards was a mere supererogation, and that it was in the power of any one of moderate abilities who had mastered the simple elements of True or Christian architecture, and had some taste for drawing, to become an architect. The tiresome study of the proportions of classical art, the necessity for the acquisition of foreign languages, the pursuit of what was called *Belles Lettres*, and of undertaking foreign travels, were all done away with: a new royal road was opened up, and Free Trade in Art was proclaimed. There can be no doubt that many men who were before deterred from entering upon the study of architecture from the difficulties which it seemed to present, gladly availed themselves of the relaxation which followed in the course of education upon the publication of Pugin's "Contrasts" and his "Principles of Christian Architecture," and embraced a system which seemed to afford greater scope to the imagination, and at the same time dispensed with much that is distasteful to the young mind. It would be idle to deny the many valuable results that have flowed from the study of English antiquities, or to shut one's eyes to the noble works which have been executed by disciples of this school; but it is certain that the commencement of the public distrust of the architect was coincident with the revival of a taste for Gothic architecture, and it is not difficult to understand how this change was brought about. The public had before been accustomed to regard an architect as a superior being, by reason of his education and position; but finding that architects themselves ridiculed classical attainments as pedantic, and that the ranks of the profession were being recruited by men who were ignorant of everything but their business, they took their authors at their word, and came to regard an architect as merely a superior artizan, who might be entrusted with the carrying out of work, but who was of such a nature that he required to be held with bit and bridle lest he should turn and rend you.

It is this feeling that has led to the ignominous conditions that have been imposed upon concurrent architects in competitions for designs and public appointments. What, for example, can be more degrading to a man of any delicacy of feeling than to have the duties of his office rigorously defined by a code of regulations, as is now done with most new appointments? Not only, however, are the architect's duties prescribed, but his emoluments are also usually restricted, with a view to prevent his claiming any additional compensation in case he is called upon to perform any additional work incidental to his office. Everything is, in fact, done in order to prevent the possibility of the architect taking advantage of his client, and the honour of the architect himself is not considered as of any value.

A large proportion of profitable business which formerly fell to the share of the architect has of late years been monopolised by engineers and surveyors. Forty years ago the business of the surveyor was scarcely recognised apart from that of the architect. Now, the surveyor has established for himself an entirely distinct branch, and has succeeded in alienating from the architect some of the best paid portions of his business, leaving him with some of the most embarrassing and least remunerative parts. Again, by the action of the Government, a considerable number of large public buildings, such as churches, barracks, hospitals, sanitariums, &c., both at home and abroad, have been taken out of the hands of architects and given to royal engineer officers; or if an architect has been employed, the whole credit of the design is usually given to the officer in charge. The Post-Office has thus dispensed with architects, and we have lately seen that a large building has been erected in London by this department, at a cost exceeding 200,000*l.*, by a subordinate officer in the employ of the Government.

These are some few of the grievances of which architects complain, and I might readily enlarge the list, but I do not desire to do so further, but prefer to call attention to a new danger with which architects are threatened rather than dwell upon evils which are known and admitted.

The danger to which I advert is the insidious encroachments of the landscape-gardener upon the domain of the architect. It is true this is no new thing, but the encroachments have of late become more daring than before, and it behoves architects to put themselves upon their guard. The profession of the engineer has grown up chiefly through the extraordinary development attained by the railway system in this country, and however much architects may lament the fact, there can be no dispute that the engineer has fairly won the position he has acquired, and that he supplies a want which the architect was not fitted, either by taste or education, to supply. But this is not the case with the landscape gardener: his functions are essentially different from those of the architect, to which they are usually and properly subordinated, and there need not be any jealousy or any question as to jurisdiction between the two. Some landscape-gardeners have, however, assumed the title of landscape architects, a palpable misnomer, which can only have been assumed to mislead, and have taken upon themselves to design and carry out buildings in addition to their other duties. The public, little accustomed to discriminate, are deceived by the assumption of the name of "architect," and the landscape-gardener is not unfrequently entrusted with commissions for works of importance, to the manifest injury of the architect proper. It may, perhaps, seem idle to complain of the preference of the public for these irregular practitioners, seeing that, as already observed, there is no recognised standard of architectural education, and that anybody is entitled to call himself an architect, and to carry out any work that he may be able to obtain; but that is not the point to which I desire to direct attention. It is, of course, impossible to coerce the public taste, and to lay it down as a rule that none but properly qualified men should be employed upon architectural works; that is clearly impracticable in the face of the attitude of the present Government, whose action with regard to architects is not only countenanced, but applauded, by the majority of people in this country. We must be content to take things as they are, and for the most part we have become accustomed to the present position of affairs; but the new danger consists in this, that while hitherto architects and landscape-gardeners have been in the habit of working side by side upon the same work without any risk of interfering with each other, it is now impossible for the architect to call upon the landscape-gardener for his assistance, or to acquiesce in his appointment, without introducing at the same time a rival who may take away the most profitable portions of his work, interfere with his most cherished designs, or perhaps supplant him altogether. This could not have occurred under the old *régime*, but it does happen now, and the sooner architects become alive to the danger they incur in thus acting the better it will be for all parties.

It comes about in this wise. An architect has prepared designs for a mansion, let us say; the site is bare and unadorned, and the client determines to employ a landscape-gardener to lay out the grounds. The landscape-gardener prepares a plan, showing not only the arrangement of the grounds, but terraces, conservatory, garden-walls, lodge, entrance-gates, stables,—in fact, everything necessary for the completion of the mansion and its surroundings. This is submitted to the client, who is in all probability ignorant of the distinction between the duties of the architect and landscape-architect, the design is approved by him, and the landscape-architect is entrusted with the execution of the work. The architect is not perhaps consulted at all, or if he is consulted and objects, the landscape-architect makes the plausible suggestion that as he will have the control of the roads and paths, walls, &c., it will be desirable that the buildings which adjoin should also be placed in his hands: perhaps he suggests that the main building itself has not been properly treated, or that the expenditure has been excessive, or that he has carried out similar works for the Marquis of Blank, or Sir Humphrey Chose, and the client, as we have before said, ignorant for the most part of the practice in these matters, and dazzled by the achievements of the landscape-architect, acquiesces, although perhaps reluctantly. It is not the mere loss of business to the architect which is to be looked to in this proceeding, although that is not to be disregarded; but it is to be borne in mind that it is in the power of the landscape-gardener to interfere greatly with, or, perhaps, entirely destroy, the effect of the architect's design. The mansion may be Gothic, and the lodge Classic, or, *vice-versâ*, the stables may dwarf the house; and it is also always in the power of an unscrupulous man to put his rival's work in the shade, or by means of colour, outline, or juxta-position, to enhance the effect of his own compositions at the expense of his coadjutor's.

This is not an illusory picture, and the danger is real and threatening. The remedy is in the hands of architects themselves: let them take care not to associate themselves with landscape-architects, but choose a landscape-gardener of the old type; let their respective duties be clearly explained to the client, and if necessary defined in writing; and, above all, let the architect assert his authority, and insist that all drawings, for whatever works, shall be submitted for his approval before being put in hand. This is the architect's proper position, and if he abdicates his right to being consulted upon everything relating to the house and its surroundings, he will inevitably lose the confidence of his client, and will find himself immersed in numerous unnecessary difficulties.

CIVIS.

LONDON AND ITS FOGS.

LONDON and fog are as closely allied as Scotland and mist; but between the Scotch mist that is reputed to be able to "wet an Englishman to the skin," and the black dry fog of the metropolis, there is a wide difference. The reports which with difficulty can be gleaned from old newspapers and journals concerning previous London fogs are very meagre, which may be wondered at considering that each fog was, like that of the week before last, the cause of many fatal accidents. On January 1, 1720, London was so darkened by fog that several chairmen, with their burdens, fell into the canal in St. James's-park; many persons fell into the Fleet-ditch, and many into the Thames. On December 2, 1761, "the fog was so very thick in and about London that even chairmen lost their way in the streets, and carriages ran against carriages, by which much mischief was done, and many lives lost." On the 19th of November, 1767, many deaths were caused by a dense fog, Fleet-ditch and the Thames being, as usual, the recipients of many of the wanderers. Before referring to the great fog in London of 1813-14, it may be interesting to notice some fogs which have appeared in other places. A gentleman writing from Kensington, Connecticut, U.S., under the date of the 19th of April, 1758, says:—"On the 3rd inst., about sunrise at this place, was a fog of so strange and extraordinary appearance that it filled us all with great amazement. It came in great bodies, like thick clouds, down to the earth, and in its way striking against the houses, would break and fall down the sides in great bodies, rolling over and over. One of our neighbours was then at Sutton, 100 miles distant, and reports it was much the same there." On December 15, 1774, Amsterdam was wrapped up in a fog of so dense a character that people ran against each other, even though provided with torches; 230 persons were drowned by falling into the canals; their cries were heard, but no one could venture to their relief: "the case was the same all over Holland." The city of Dublin was covered with such an intense fog, on the 8th of February, 1798, "as the oldest men do not remember to have seen." Although the country round was in a great measure free from its influence, yet in the streets it was at one time so thick, that persons in conversation could hardly distinguish one another's faces. The carriage of Mr. Taylor Rowley was driven into the Liffey, near Carlisle bridge. Mr. Rowley and his coachman had the good fortune to escape, but two fine horses which drew the carriage were drowned. At night it was scarcely possible, even with the aid of lighted flambeaux, for passengers to explore their way along the streets without danger or accident." The chronicle omits to state that many persons met with a fate similar to that of Mr. Rowley's horses. The great fog in London, which happened in 1813, is briefly recorded in a newspaper of December 31st, in that year. "The density of the atmosphere during the day, and the heavy fog at night, which prevailed for the whole of the last week in London, and many miles round, has been very remarkable, and has occasioned several accidents. On Monday night the mails and other coaches were delayed unusually long. The Glasgow coach, which should reach Stamford by eight, did not arrive on Tuesday till two in the afternoon, and the York and Edinburgh not until four." Many of the coaches were overturned; the York mail twice, near Ware, notwithstanding the guard and passengers walked to keep it in the road. The Maidenhead coach, on its return to town the same evening, missed the road, and was overturned. The Birmingham

mail was nearly seven hours in going from the Post-office to Uxbridge, a distance of less than twenty miles; and the short stages in the neighbourhood of London, had two link-bearers running by the horses' heads. As during the fog of last week, many persons were drowned in the Thames and the canals. The following paragraph from the fashionable intelligence of the *Morning Post*, December 29, 1813, reads somewhat strangely in 1873: — "We stated yesterday the Prince Regent's departure, a few minutes after seven o'clock, for Belvoir Castle, the seat of the Duke of Rutland. His royal highness had not got further than about a mile from Tottenham-court-road, when one of the out-riders was thrown off into a ditch. To see the road was found impracticable. The lamps in the carriage were of no use, and even flambeaux were insufficient." Returning were as tedious as to go on. "However, his Royal Highness resolved to give up the idea of proceeding to Hatfield, and getting out of his carriage whilst it was turned, remained knee-deep in mud for some minutes. By taking off the leaders, the carriage was at length turned, and proceeding slowly with flambeaux before the horses, almost to Carlton House, his Royal Highness got safe there at about half-past nine, having been two hours and a half in proceeding about one mile beyond Tottenham-court-road." Certainly travelling in those days through Kentish Town in foggy weather, on a road untouched by Macadam, must have been far from agreeable.

What is the cause of these dense fogs? Those who have studied the question, reply,—A fog is formed by the mingling together of masses of air of different temperatures, and may properly be termed an *earth-cloud*, because it is formed at the surface of the earth, and seldom rises many feet above it. A London fog does not in general extend much beyond the height of the houses. During its prevalence one may, by ascending St. Paul's Cathedral, obtain a clear atmosphere, while underneath the dark vapour is rolling like a sea, through which the spires and steeples rise like the masts of stranded wrecks. London fog is not equal in density in all places; a long depressed line marks the course of the Thames, and the deepest darkness hangs over the most crowded neighbourhoods. Before the Act of Parliament was passed requiring the London factories to consume their smoke, the fog was particularly dense in the localities of the great breweries. The height of the fog is greatly determined by the nature of the subsoil. If it is clayey, it stands high, and low if it be of sand or gravel. Defrance states in his treatise on Vapour, that fog is occasioned by a descending current of air, which beats down the smoke and rolls it over the surface of the earth. At this time a current of air may be observed to descend through the chimneys which have no fire, producing a strong odour of soot, thus proving the existence of descending currents in the atmosphere. Therefore, if the smoke of tens of thousands of chimneys be discharged into the air, and there mingled with watery vapour, and then again forced to descend, a dense fog must necessarily ensue. It is generally considered that those fogs which have a peculiar taste, and cause the eyes to smart, owe their disagreeable properties to gases and vapours produced by the combustion of fuel, and from this source the atmosphere is charged with carbon, sulphurous, nitrous, and pyroligneous acids. A moderate wind will usually break up a fog, but an increase of temperature without wind tends to increase its density. It has often been observed that during the middle of the night until early in the morning, London is free from fog, which, however, sets in as soon as the fires are lighted; sometimes it clears away for a short time at noon, and increases in density as evening approaches and the gas is lighted. London fog has also a peculiar tidal motion, which tends down the river towards the marshes, and an extraordinary amount of electricity frequently accompanies thick driving fogs. Fogs and epidemics often accompany each other; they have, it may be, a common origin, or, perhaps the one is the cause of the other. Dr. Prout, in his Bridgwater Treatise, specially refers to a certain poisonous gas, seleniuretted hydrogen, which exists in the atmosphere during a fog, the smallest atom or bubble of which when inhaled by the nostrils excites pain: this is followed by catarrh and pains in the chest. During the recent fog, as is well known, both human beings and animals perished, probably through the inhalation of this poison.

Strange it is that though London has so long and frequently suffered from the visitations of fog, scarcely any man of science has ever come forward to propose a plan by which it might be entirely abolished and stamped out.

THE RESTORATION OF THE CHATEAU OF PIERREFONDS.*

The restoration of the exterior walls and towers of the château, comparatively easy as far as the repetition of existing forms was concerned, must have called for very great practical knowledge in the design and erection of scaffolds, and I regret very much that I was unable to visit the château in the earlier years of its restoration, especially as on these points M. Viollet-le-Duc is *facile princeps* in France, having almost, I may say, created a revolution in the principles of their construction.

In consequence of their immense thickness, and of the excellent quality of their masonry, the walls had all retained their vertical positions, and, excepting the interior vaulting and small internal walls of slight importance, no underpinning was required in the restoration. The breaches and gaps were filled in, and the masonry in the upper part of the walls was executed in the ordinary way,—that is to say, for the exterior walls, rails were laid round the whole of the château, on which the materials were drawn to their respective position, and raised by means of an immense steam crane; the thickness of the walls otherwise allowing the materials for cross walls to be rolled along on their summits. For the interior walls the scaffolding was continuous, the stones being placed in position by travellers.

The stone details for the windows, cornices, and other decorative features, were built in block, and carved or moulded in their respective positions: this applies only to those parts which were built with the soft limestone of France; whenever a harder stone was employed, it was carved or moulded first.

About 18,000 cubic metres of stone were employed in the restoration, all obtained from the neighbourhood of Pierrefonds; the chief varieties being (hard stone) Lavasine, Croni, Villiers liais de senlis (soft stone), from Pierrefonds itself (blue royal) a hard compact stone, haute-feuille, and senlis, these several varieties coming from the same quarries as those in the old building.

The floors of all the large rooms are carried on oak girders, the material being obtained from Viller's Cotteret, and the forests of Laor and Coucy, the oak of the forest of Pierrefonds being valueless for trusses or girders. These oak girders are halved and trussed, the ends rest on stone corbels, the design of which varies in the several rooms. On these girders are laid joists 6 in. by 8 in. deep, with a space of from 7 in. to 8 in. between; on the top of these the battens are laid with a bed of plaster of Paris, from 2 in. to 3 in. thick, the ceiling beneath being formed between the joists. The flooring-joists are laid on the plaster of Paris, being kept in position by the same material; the flooring is ¾-in. oak boarding. The trusses of the roof are all in iron, as well as the purlins, rafters, and laths or battens to hold the slates,—the latter are suspended in an ingenious manner on the iron laths (which serve as slate battens) by small clips of copper, so that any slate can be taken out and replaced, if necessary, without disturbing the others. The slates, which are of a deep violet colour, come from Furnay in the Ardennes. These constitute the chief constructive points; I have yet to direct your attention to those portions of the interior, viz., the courtyard, staircases, and rooms, the designs of which may be said to be more or less original, though based by M. Viollet-le-Duc on the architectural fragments found in those excavations.

Commencing as we enter the courtyard on the left is the exterior of the great assembly-room, and below it the arcade or gallery, forming corridors outside the guard-rooms. This corridor externally is divided into bays, 13 ft. wide; on the ground-floor is a three-centred arcade, carried on stunted columns; and above a segmental arch, inclosing three trefoil-headed windows, a balustrade crowning the whole. The interior of this corridor is vaulted with segmental barrel vaults in stone panelled, each vault abutting on its neighbour. The transverse wall between each bay has on the ground-floor a segmental arch, with huge keystone; and on the first, or mezzanine floor, a trefoil-headed arch, carried on corbels. The great windows of the assembly-room have solid mullions and light transoms above the balustrade to every alternate bay below, and dormer windows similarly treated. Continuing round on the north side is the belfry, an extremely picturesque feature; below it is the great window lighting the vestibule to the apartments of the garrison officers. The jambs of this window descend to the ground floor in the form of buttresses, which are corbelled out and carried on massive columns, with carved capitals, a lofty arch being thrown across between. This marks the chief entrance to the guard-rooms of the back entrance to the château. Beyond this feature is the great flight of steps leading to the entrance of the officers' rooms; the stairs rising to the first floor being strongly accentuated in the external architecture.

On the west side of the courtyard is the chapel, which is perhaps one of the happiest features. The lower portion is an origina ltreatment of the Flamboyant porch. The rose-window above is perhaps somewhat decadent in style, but was, I believe, based on the original feature. The gable and corner buttresses are well proportioned and fine features. The staircase leading to the principal apartments in the keep forms one of the more remarkable features in the court. It is preceded by a grand porch with three archways, and external flight of steps beyond them; internally the staircase is circular, externally octagonal, the windows lighting it rising with the steps.

The decoration of the interior is not yet completed in all the rooms: with the exception of the great assembly-room, and a vaulted chamber in the Cæsar tower, its principle is the same in all the rooms; a dado in oak, carved and panelled 5 ft. high, runs round the principal apartments; above this the wall is stencilled with various devices, and a deep frieze is carried round the upper part of the walls, with figure or ornamental decorations. The chimney-pieces are all in stone, carved and richly painted and gilt. The oak girders are carried on stone corbels, carved and painted. The woodwork on the ceiling is painted of a dark ground colour, relieved by light colour ornament; the ceiling between the joists has dark ornaments on light ground. The decoration varies in every room, and has all been designed expressly by M. Viollet-le-Duc; the colouring is quiet and extremely harmonious in tone, and is, perhaps, the best evidence of the wide range of his talents. The room in the Arthur tower has an octagonal vaulting, the chimney-piece being decorated with a representation of King Arthur and the Knights of the Round Table. The great assembly-room has been turned to account as a museum of arms; these were, I am sorry to say, removed to Paris during the late war, and have not yet been restored to their places; the hall is surrounded with cases to hold the collection, which is, I believe, of great value. The roof consists of a pointed band vault in wood, painted with various devices, the boarding being fixed to the iron trusses of the roof. The chimney-piece in this hall is the finest in the château; it is double, as it has two grates in it, with tiles at the back; and above are placed in niches and on pedestals the nine heroines of antiquity, with their coats of arms above, and a crenelated cornice, with miniature turrets and battlements. In conclusion, I have only to add that, although the restoration was necessarily stopped during the late war, I have every reason to believe that it will be continued and completed now; at present there are but a few artists at work, which may be accounted for from the cessation of the Emperor's donations. The whole work reflects the greatest credit on M. Viollet-le-Duc, who has consecrated to it an immense portion of his time; and it places on record for future generations one of the most interesting features of the feudal period of the Middle Ages.

* From the paper by Mr. R. P. Spiers referred to in our last.

The Inns of Court Hotel.—We are glad to hear that the pile of buildings in Lincoln's-Inn-Fields, long left unfinished, is now in course of completion. The Inns of Court Hotel Company has purchased the entire property, and having restored the Holborn block, are now finishing the remaining portion, which will form part of the hotel according to the original intention. Messrs. Lockwood & Mawson, the original architects, have the matter in hand.

THE KEEP OF CLITHEROE.

THE castle of Clitheroe, the chief seat of an ancient and extensive honour, though one of the smallest, is perhaps the strongest, the oldest, and from its position one of the most remarkable of the fortresses of Lancashire. It is placed upon the left or eastern bank of the Ribble, here the boundary between Yorkshire and Lancashire, three quarters of a mile from the stream, and about 130 ft. above it. It occupies the summit and upper part of a limestone craig, which, precipitous in parts, and very steep on its northern flank, falls, according to the dip of the rock, less steeply towards the south or south-west. Hence the northern point was selected for the keep and upper ward, and for the lower ward and approaches, the shoulder and slopes upon the south. The Roman way from Manchester, by Skipton to York, ascends the dale about half a mile east of the rock, which could scarcely have been neglected as a military post by any people who held the district in other than very peaceful times. The town of Clitheroe has sprung up at the foot of the rock upon the north-east.

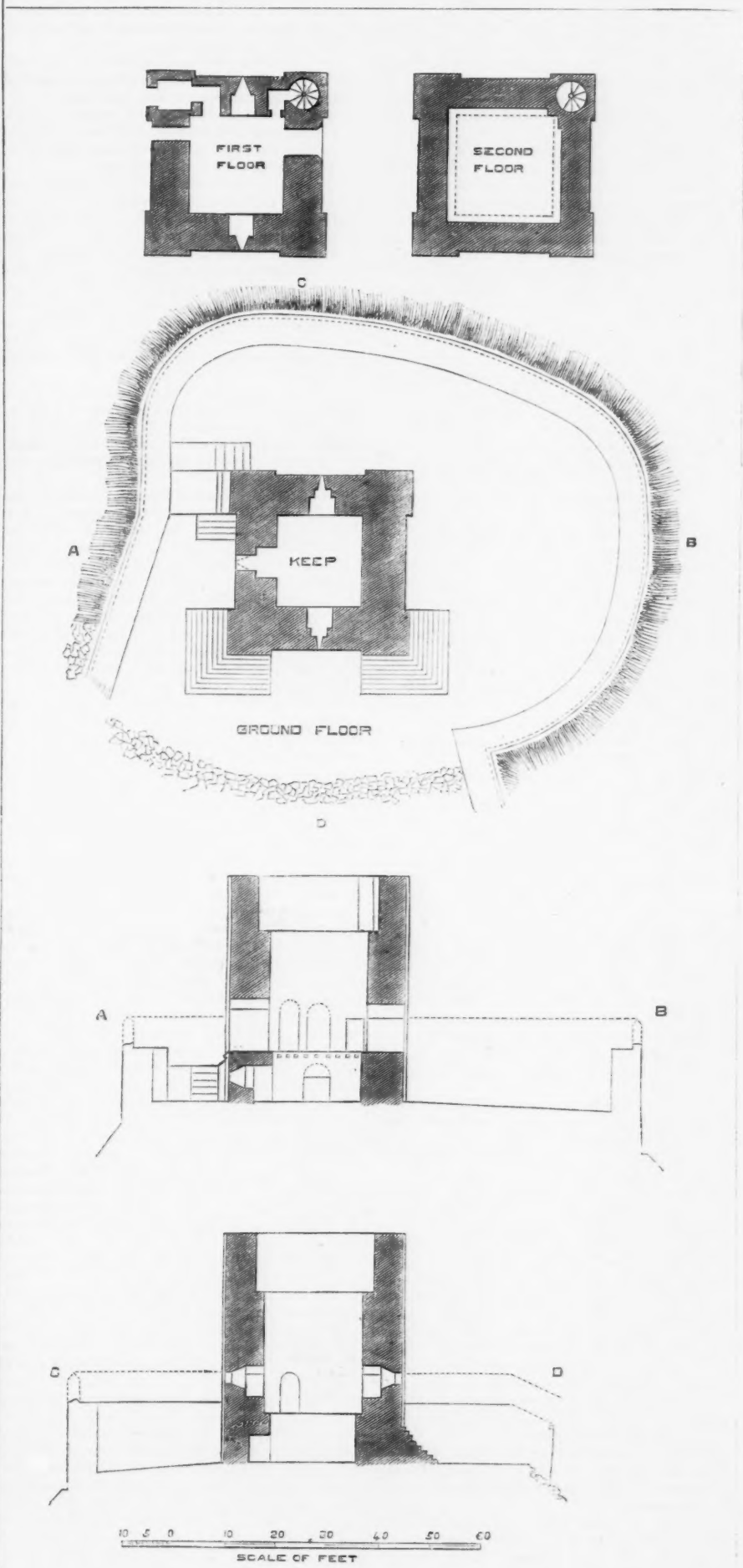
The keep stands within, but close to, the east side of a small rounded area of about 80 ft. by 90 ft., contained within a curtain wall, which skirts the edge of the rock. This curtain is 6 ft. thick, 12 ft. high inside, and from 14 ft. to 20 ft. outside. The circuit, which has no doubt been complete, is broken for about 70 ft. on the southern side. This is the breadth of the neck by which the upper ward was united to the lower, and the curtain at each end of the gap is extended southwards and south-eastwards down the steep to include the latter. Thus, what is wanting is none of the exterior curtain, only the interior and cross wall between the two wards. The open space is a steep of rugged broken rock. Probably there was a cross wall and doorway above, and a narrow flight of steps leading to it from below.

The keep is of rough rubble masonry, with ashlar quoins and dressings. It has neither plinth, set-off, nor string, and preserves its exterior dimensions to the summit. Each angle is capped by two pilasters of 9 ft. breadth by 11 in. projection. They unite at the angles, which are solid. The two southern angles are supported by extravagantly large low buttresses, of modern addition, but it is said they were preceded by buttresses somewhat similar, though of much slighter character.

The keep is 33 ft. square, and about 43 ft. high. The walls are 8 ft. thick at the base, and consequently enclose a chamber 17 ft. square. This is the basement floor, and at the ground level. It is 9 ft. high, and the floor, which covered it above, and is now gone, rested upon nine beams, and was therefore immensely strong. The north, south, and west wall are each pierced by a loop, set in a round-headed recess, 5 ft. broad, and 5 ft. high to the springing. Two of these loops have been converted into open breaches, and the third, to the north, has been walled up, and the recess covered with a flat lintel. This floor must have been entered from the room above by a trap and ladder. It was, as usual, a store, the value of these strong small towers depending upon their being well provisioned.

The first floor rested upon a set-off of a foot, and is therefore 19 ft. square, with walls 7 ft. thick. It is 23 ft. high. It has in the north and south walls small square-headed loops, placed in round-headed recesses of 4 ft. 6 in. opening. In its west side, close to the north end, is a doorway 2 ft. 10 in. broad, and 8 ft. high, round-headed. In the north wall, on each side the loop, is a door. One of these, flat-topped, of 2 ft. 6 in. opening, and 6 ft. high, leads through a small mural lobby, 4 ft. 8 in. by 3 ft. 2 in., into a well-stair, 7 ft. diameter, which occupies the north-east angle, and commencing at this level, ascends to the battlements by fifty-four steps. The other door, of 2 ft. 11 in. opening, 8 ft. high, and round-headed, leads by a passage bent at a right angle with a barrel vault, into a plain mural chamber, 7 ft. by 5 ft., also barrel-vaulted, and which, no doubt, had a loop in its west wall. This wall, however, is now broken away, so that the chamber has much the aspect of an entrance-door, which it certainly was not.

The second, or uppermost, floor rests upon a set-off of 2 ft., and is therefore 23 ft. square, with walls 5 ft. thick, and at present 11 ft. high. Singularly enough, it shows no trace of any wall-opening whatever, as though it had been added in modern times for effect only, which, however, does not appear to be the case. The staircase, however, has certainly been repaired, and no doubt originally opened into this floor. The wall at the interior angle is thickened somewhat to give space for the stair. The walls may have been a foot or so high, but scarcely more. The parapet is gone, and was probably another 5 ft. The north-east angle seems to have ended in a small square turret.



The principal entrance was evidently on the first floor, in the east wall, reached by an external stair built against the wall, and ascending from the south end. This is clear from the position and dimensions of the doorway, and from the absence of a loop on this side of the basement, where it would have been covered by the stair-case.

The small door of the west wall of the same floor seems to have led upon the rampart of the adjacent curtain, here only 11 ft. from the keep. There is such a door at Arques and Rochester, and also at Helmsley and Adare. This keep contains no fireplace nor gardrobe, nor ornament of any kind.

The lower ward has been so altered for domestic purposes, and is so built over, as to be very obscure. It was at least eight or ten times the area of the upper ward, and descended 280 ft. down the slope, with an extreme breadth of 150 ft. The modern dwelling-house is built upon the south-east curtain, and no doubt represents, and probably contains, part of the old domestic buildings. Buck gives a view of the southern front of this ward, and shows a large round tower upon one of the angles not now seen.

A convenient ascent skirts the foot of the west curtain, or rather of the cliff upon which it stands, and enters at the upper end of the lower ward, just below the keep. This, however, is probably modern. The old way seems to be represented by the road from the town, which rises on the other or eastern side.

About a furlong to the south of and much below the castle is a steep straight bank of earth with an exterior ditch, probably an outwork covering the foot of the hill.

The castle is the property of the Duke of Buccleuch, whose steward for the honour of Clitheroe resides here, and allows visitors to enter the keep unchallenged. The chief rents and royalties of the honour are vested in the Duke, and are said to be valuable. All is neatly kept, and is in as substantial repair as becomes a ruin; but his Grace's most commendable zeal does certainly a little obscure the fabric it was intended to preserve, and it is to be regretted that the new work was not made more clearly distinguishable from the old.

The name of Clitheroe, though evidently old, and said in part to be British, does not occur in Domesday. Whittaker is of opinion that the place is included in Bernulfeswic, now Burnoldswick, a parish about six miles north-east of the castle, and that it is referred to as the Castelry of Roger of Pictavensis or of Poictou. It is stated that "in Bernulfeswic Garnel held 12 carncates, paying geld to Berenger de Todeni. The manor is in the Castelry of Roger the Poitevin." Usually Roger is identified with the Castle of Lancaster, but at that time Lancaster Castle was not built, and that lordship did not belong to Roger. Roger was a large tenant in chief in the shires of Chester, Derby, Notts, and Lincoln. In Yorkshire and Lancashire he then held but little. The mesne lord, de Todeni, was one of the family who had Belvoir; Dugdale says, the son of Robert de Todeni, who built it. He does not again appear in connexion with this part of England.

Roger is thought to have granted the fee to Roger de Buisli, from whom, or from Albert Greslet, it came to the De Lacys of Pontefract, lords of Blackburnshire, of whom Robert de Lacy is said to have held it under De Buisli. This De Lacy, whose history belongs to Pontefract, is the reputed founder of Clitheroe keep in the reign of Henry I., and certainly the building is not of later date. From that time Clitheroe shared with Pontefract the honour of being the seat of the De Lacy power, and so remained until their estates merged in the earldom and duchy of Lancaster, and this again in the Crown. The founder probably also endowed the Chapel of St. Michael within the castle, probably in the lower ward, and which is mentioned in the reign of Henry I. A claim, however, to represent this chapel is set up for the parish church, though this building could never have been within the castle.

Clitheroe, like other strong places in Lancashire, was held for the king in the Parliamentary struggles, and in 1649 the castle was ordered to be dismantled.

Charles II. granted the castle and honour to General Monk, whose son, Christopher Duke of Albemarle, left it to his wife, Lady Elizabeth Cavendish, who again left it to her second husband, Ralph Duke of Montagu, from whom it has descended to the present owner. G. T. C.

1873.

ART CRITICISM.*

If "every man is the measure of all things to himself," the corollary to that saying is the other that "the true measure of all things is God," and so the depth and measure of a man's moral nature are the measure of his partaking of God, "in whom we live and move and have our being," and thus there is no exaggeration in speaking of the inspiration of the poet or the artist.

It is in this spiritual world where is to be found that mystic force called sympathy,—the action of moral intelligence on moral intelligence,—an electric cord which girdles the world of mind and carries messages from soul to soul, resulting in effects which influence more than any other thing the whole aspect of social life.

There is a power pervading the living influence of the truly noble that draws congenial elements from the crowd, inspiring its votaries with a courage to carry victory to a higher issue than mere mortal combat, to carry by assault the citadel of the passions and cast out the demon within, inspiring men with that truest of heroism to look beyond self and mere material good, inspiring them with enthusiasm and devotion to the good, the true, the beautiful; and of this moral ideal, material beauty is but the sign and symbol.

It is the sentiment which underlies the work of the artist which renders it noble or ignoble, the subtle element which stirs the heart, which appeals to the mind, which carries the beholder out of himself, and places him *en rapport* with the soul of the designer.

"The statue is born in the clay, it dies in the plaster, and lives again in the marble." The clay model is not a mere piece of handiwork; it is, above all, the work of the artist's brain; the cast is produced by a merely mechanical operation; the marble is sensitive to every touch of the worker. Labour there must be, and the hand must be trained to answer every wave of thought; if not, to the extent it fails so to do will the realised work fall short of the ideal. What that ideal was no one but the artist himself can fully know; but, having sounded the key-note of his thoughts, a responsive echo may be awakened in the mind of another, which, with remarkable distinctness, repeats that note, and the mind of the recipient may even tack on harmonies to it never dreamt of by the originator. Mechanical excellence is doubtless an admirable thing, but it must not be confounded with artistic excellence, it is but the servant of art, without whose service she is helpless. Theory and practice must go hand in hand; science and sentiment lend their aid to the artistic constructor.

A language without grammatical construction is deficient in vitality: it may exist—like some of those in Central Africa—for a generation only; but when the disjointed fragments are constructed into a system, the language grows and expands so widely that it is with difficulty the original roots can be traced. Cultivated with care, the weed becomes the flower; the acrid, unpalatable berry the rich and luscious fruit. The language, or certain words in the language, may have had their origin on the banks of the Indus or of the Euphrates, or in the Isles of Greece, or in the City of the Seven Hills; it matters not whence derived, they are but the means of giving expression to thought. Worthy thoughts, although rudely expressed, deserve admiration; but if, in addition, they are beautified and arranged into harmony, or brightened by the light of eloquence, they receive the devotion due to genius. Style is but the language in which the artist expresses himself, and it is according to the amount of thought embodied in the work, and the beauty and eloquence with which it is expressed, that he should be judged.

Thousands of eager listeners crowd to hear the words of wisdom uttered by a speaker, and tens of thousands con these words next day at ease by the fireside. When read over with deliberation, their truth and value can be better estimated than when heard from the living voice. Why, then, not print them off at once? Why, but that the living influence of the man cannot be so intensely felt. Another may read the printed page with more point and emphasis than the author, but the effect is not the same. A work of art may be copied so skilfully as to be mistaken for the original, but the copy will never be valued as such. Harmony cannot be elicited from the cord of sympathy unless it is touched by a master-hand. Man, created in the image of God, has the gift of originality bestowed upon him; he is touched by a ray from the holy of holies; he is inspired to produce what has not before existed; he becomes a creator. The creations of genius are the most precious of gifts,—too precious to be lavishly dealt out: let those prize them who possess them; but, above all, let us pay due respect to the great ones who created them.

But the soul of man is chained while on earth to a mortal frame,—material wants must be supplied; he ransacks the store of Nature and subjects to his uses what he finds there. Not content with merely subjecting the material so found to useful purposes, he adorns his handiwork with suitable detail; he strives after harmony of proportion; he studies effects of light and shade; he constructs with skill; he combines technical excellence with æsthetic beauty. Special requirements call for special treatment different materials must be differently used; the laws of nature must be studied. Here the ideal and the real meet, and they cannot be severed; a drag is put upon the imagination; the poetic is burdened with the prosaic. This restraining influence must be overcome if the work is to be a work of art; the skeleton requires to be carefully constructed, but upon it must be superadded the grace of form and the charm of colour. The true artist must be possessed of the faculty of design, of the faculty of invention, of the power to express an original thought in the material he has at command. His aim should be to elevate and refine the taste of his age, to give new sensations to those around him, to add to the amenities of life, to enhance the pleasures of daily existence. He may not be appreciated. "We have no absolute criterion of greatness amongst us; we can but be measured by our relation to each other." He may fall short of his aim, but he will have his reward if he has raised his own taste, and so increased his capacity for enjoyment.

To discover the sentiment underlying the work of the artist, to understand the technical excellence thereof, and—where such is a necessity—the suitability of the design to the purpose for which it is made, are absolute requisites to the formation of an art-critic.

* See p. 924, *ante*.

SOUTHSEA LAUNDRY COMPANY.

On Tuesday, the 16th inst., the Mayoress of Portsmouth laid the foundation stone of the steam laundry buildings, which are to be erected in the Highland-road, Southsea. The buildings are for a company which has been formed for the purpose of providing an establishment where the washing, wringing, drying, mangling, and ironing of articles of all kinds, can be performed by machinery.

The building will be a plain but substantial structure, the walls of Portland cement concrete, built with Drake's patent apparatus. The gravel and sand will be obtained by digging on the site. Attention has been paid by the architect to the internal arrangement, so that the business may be carried on with ease and economy. On the ground-floor will be a receiving and sorting room, large washhouse, drying-room, private washhouse, disinfecting-room, engine-room, store, and office. The drying-room is to be heated by a steam-coil, assisted by the waste heat from the boiler, which is placed for this purpose below the floor; the washing, blueing, wringing, and drying, being completed on the ground-floor. The articles will then be raised by a lift to the floor above, consisting of starching, folding, mangling, and ironing rooms. Here the process will be completed, and the things will descend by another lift into the packing-room, where they will be sorted, and placed in racks set apart for the various customers, ready to be returned.

Stabling, coal-stores, &c., detached from the main building, are also provided for.

Mr. Archibald H. Ford, of Portsea, is the architect; Mr. J. C. Cooper, of that town, is the contractor. All the machinery is to be supplied by Mr. Thomas Bradford, of London. The buildings and machinery together, will cost about 3,500*l.*, and the company will be able to wash from thirty to forty thousand pieces weekly.

New Landing-Stage at Birkenhead.—A contract for the construction of a landing-stage at Birkenhead, which is expected to cost 50,000*l.*, has been accepted by the Mersey Docks and Harbour Board.

CARVED STALLS IN THE CATHEDRAL OF ST. POL DE LEON, BRITTANY.

STALLS AT ST. POL DE LEON, BRITTANY.

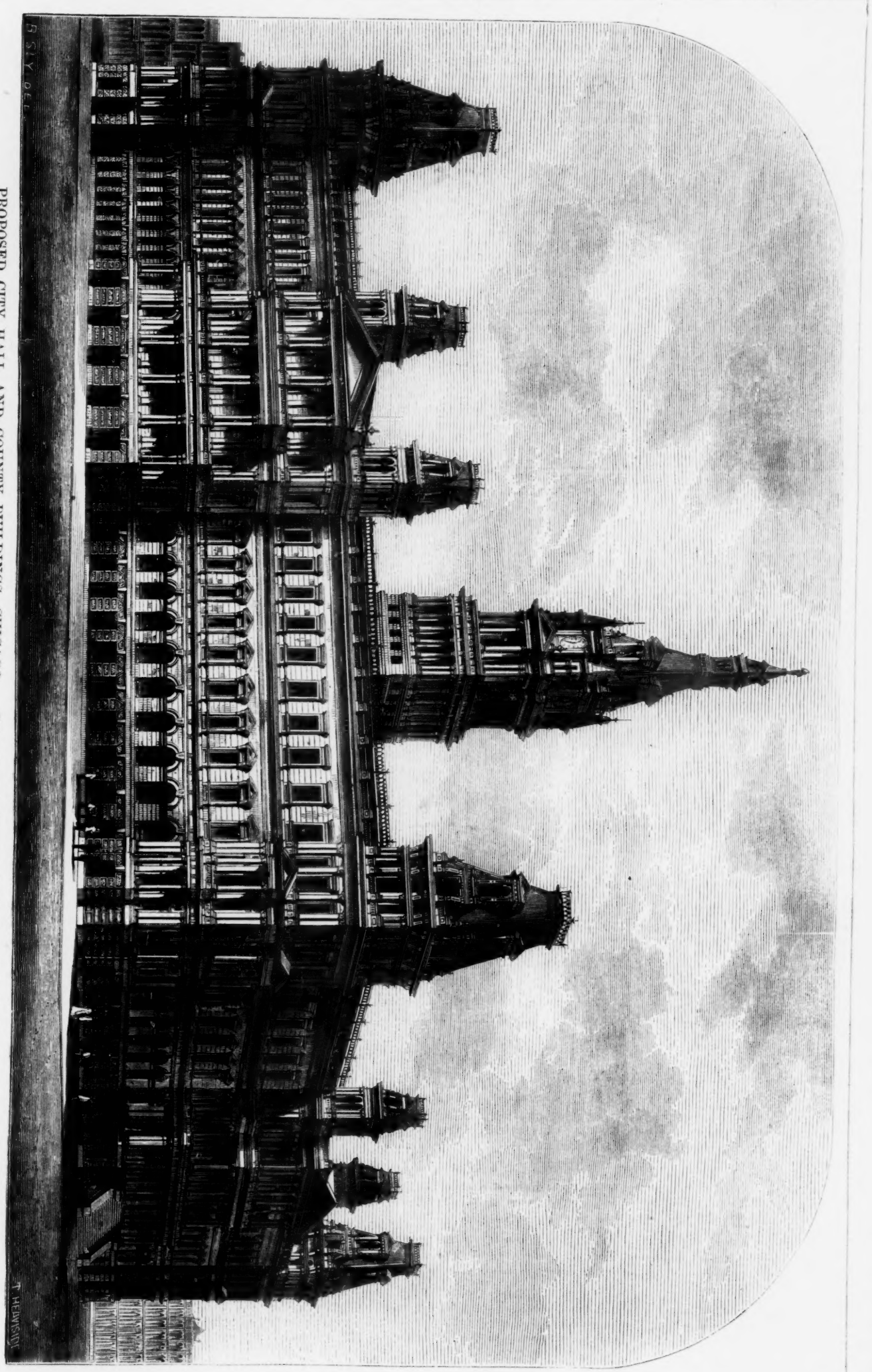
The interesting old episcopal city of Pol-de-Leon, in Brittany contains two very remarkable churches,—the Cathedral and the Church of Notre-Dame-de-Kreisker. The latter of these has a very lofty spire, entirely constructed of granite, which dates from the fourteenth century, and is a great pet with all guides and guide-book writers. Architects, however, will not be quite so contented with it, as it is far from being a satisfactory example of Gothic architecture, and will turn away from this rather meretricious and exaggerated building to examine the ancient cathedral with satisfaction.

The Cathedral of St. Pol-de Leon is really a singularly beautiful church; and though its dimensions are small for a cathedral, yet it is remarkably dignified and well proportioned. The nave bears a strong resemblance to our Early English work, and the choir and transepts are rich Decorated work.

The church contains a great deal of ancient furniture. Nearly *twenty* original stone altars *in situ*. Some of these are quite plain, with simply-moulded mensæ and plinths; but others are ornamented with rich panelling and carving. In several of these altars the piscinæ are cut into the side of the altar.

The stalls, of which we give an illustration, are situated in the choir, and are fine examples of late fourteenth-century, or perhaps early fifteenth-century, work. They are amongst the most elaborate existing in France, and are in an excellent state of preservation. They are constructed entirely of oak. Their design is very remarkable, as, although they bear a strong resemblance to German and Flemish work, they are quite unlike anything that we know of in France. A comparison of the "shades" of these stalls with those which we illustrated some time back from the Cathedrals of Hildesheim and Bois-le-Duc, and from the Church of Moosburg, near Munich, will satisfy our readers of the truth of this remark. We were unable to obtain any reliable information concerning the history of these remarkable stalls.

Palestine Exploration Fund.—M. Ganneau, who has charge of the Jerusalem researches, while at Jaffa discovered the ancient cemetery of the town. On the way to Jerusalem he revisited the site which he had previously identified with the Biblical city of Gezer. Here he was able to trace in part the plan of the old city and the position of its houses and suburbs.



PROPOSED CITY HALL AND COUNTY BUILDINGS, CHICAGO.—DESIGNED BY MESSRS. J. C. RANKIN & G. O. GARNSEY, ARCHITECTS.

CITY HALL AND COUNTY BUILDINGS FOR CHICAGO, ILLINOIS.

DESIGNS having been invited for the City Hall and County Buildings for Chicago, forty-nine sets of drawings were submitted, and from these eighteen were selected as the best. Of the latter, the design by Messrs. J. C. Rankin & G. O. Garnsey, architects, received the majority of votes. The authors in their descriptive particulars say,—

"In selecting a style of architecture, it was determined to adopt a modern treatment of the classic, as such a style combines in its effects greater elegance and dignity, and is much less costly, than the styles which, originating in semi-barbarous ages, depend more upon the elaboration of their ornamention for effect, than upon goodly proportions or elegance of outline. Thorough symmetry of all the parts, which is an essential element in the grandeur of architectural effects, is also gained by the adoption of this style, as well as the practical use of all ornamentation."

The plan submitted, is that of a building having an open court in the centre, the inner rooms being lighted from the courtyard, and the outer ones from the several streets. The entrances are situated on all four streets, in the centre of each front—access being immediately to the basement floor. In addition to these, flights of steps on Washington and Randolph streets will afford immediate access to the principal floor from the streets.

The several floors will be connected by four double flights of stairs, constructed of iron; commencing immediately in front of the entrances, and leading to each of the four wings of the structure. These stairways will be very handsomely lighted and ventilated from the roof, as well as by windows at each landing. Elevators are also provided for, one being on the city, and one on the county, side of the building.

Access to the various rooms, on each floor, will be had from the corridors, which lead entirely round the building, and also connect the La Salle and Clark-street fronts, through the rotunda in the centre. These corridors will be well lighted from the stairways, and will be paved with marble.

It is intended to overlay the entire foundation of the building with a layer of concrete, 4 ft. thick. This method of construction was found to be absolutely necessary, after thorough and exhaustive investigation on the new Government building now being erected in this city.

The footings of the main walls will be of Illinois limestone, as that material has been found to sustain a pressure of 17,000 lb. to the inch, which is superior to most granites. The foundation walls are intended to be of the same material.

The construction of the cut-stone masonry is such that all the modern appliances of machinery can be made available in getting it out, and no gigantic dimensions of scantlings are needed to furnish the building, and to produce all the effects shown by the general view.

At the risk of reputation (observe the architects), it may again be said that elaborate ornamentation has been avoided, with the belief that the stability, endurance, beauty, and economy of the building have been consulted thereby.

The interior walls of the building are all proposed to be of brick, or, in the case of the lighter partitions, hollow tile or iron lath and standard partitions.

All the floors are fireproof, the arching between the beams being intended for hollow tile or corrugated iron, as may be selected.

The mansard roof has not been adopted, as there is no need for the space which it would supply as an upper story, and a varied sky-line has been secured by means of the corner and flanking portico towers. The roofs are entirely of iron construction, to be covered with slate laid on fireproof arching.

The matter of ventilation has been carefully considered, and it is proposed to lead the foul air downwards, and thence to the ventilating-shafts, through which are carried the furnace-flues, and to those in the great tower.

It was determined to place the tower in the centre of the building and of the interior courtyard, and treat it as a tower rather than as a dome (which in its construction would be much more expensive, and would be out of harmony with the design submitted). It was also considered that the dome treatment had become so common to all public buildings, that something different was demanded.

The adoption of such a tower was considered absolutely necessary in the construction of the entire building, containing, as it is intended, the principal foul-air shafts, the tank for the reception of the water of the artesian well, from which tank it is proposed to furnish fountains (to be located in positions afterward to be considered), and to work the elevators. It will also contain a clock, a bell, and a fire lookout.

The county portion of the basement contains accommodation for the recorder, the sheriff, heating apparatus, and the receiving vaults; and also the vaults of the circuit and probate clerks, which could not be provided, for want of space, on the first-floor.

On the city side, arrangements have been made, as called for, for the police and fire departments, the meter department, pay-room, harbour-master, gas inspector, and heating apparatus and necessary storage.

On the first-floor, on the county side, are located the treasury and collecting departments, county clerk, county commissioners, superintendent of public charities, and clerks of superior, circuit, and probate courts.

On the city side are the mayor's suite of apartments, the comptroller, treasurer, collector, board of public works department, water department, and city clerk. Accommodations are also provided on this floor for the tax commissioner.

On the second-floor are the county and probate courts, with the necessary adjuncts of jury and judges' rooms, the superintendent of schools, the law library, county surveyor, and coroner.

On the city side are accommodated the law department, superintendents of streets, public buildings and sidewalks, draughting, and special assessment department, the engineers', sewerage, and board of education. Several unappropriated rooms will also be found on this floor.

County side. On the third story, ample accommodation has been provided for the superior, circuit, county, and chancery courts, in all twelve rooms, of the area required; each of the courts being provided with jury, judges', and witnesses' rooms adjoining. A mezzanine story is constructed above the smaller apartments.

On the city side is the council chamber, which is placed in the centre of the building on La Salle-street. A gallery is provided for spectators, of the length of the room, and handsome accommodations adjoin the chamber, consisting of retiring, committee, cloak, and wash rooms, &c. These are approached through a private entrance, and the committee and reception rooms can be thrown together when needed, by the aid of sliding-doors.

Adjoining the council chamber, rooms have been provided for the superior House, if such should be created. The corridor adjoining the council chamber is enlarged to a lobby for the accommodation of the public. The supreme court is also arranged for, and has the necessary adjuncts of judges' and clerks' rooms, library, &c. The fire-alarm telegraph and Board of Health offices are also arranged for on this floor.

The total cost is estimated at 2,307,274 dolls. 85 cents.

But in case doors and windows, including frames and casings, are made of iron, the cost will be increased 461,970 dolls.

DRESS IN RELATION TO THE DECORATIVE ARTS AND PAINTING.

IN recent numbers of the *Builder* I have attempted the "Defence of Shams"; nay, more, I have presumed to claim for them an important place in any system of art-education intended for the benefit of the middle and lower classes of society; and I have expressed my belief that their honourable recognition in connexion with dress and personal ornaments would at once make them powerful auxiliaries of "legitimate" art in the elevation of the national taste.

My remarks brought upon me, in the columns of your journal and elsewhere, some censure and some ridicule, and raised the question,—"Is the desire for personal decoration so amiable and spirit-stirring a quality as to render worthy any sort of gratification that may be afforded it"? In reply, I promised to point out more definitely the closeness of the relationship I had assumed to exist between the esteemed professions of the painter and decorator, and the tailor's and dressmaker's unhonoured trades. But the subject of dress, in all its bearings upon individual and public *morals*, as suggested for my consideration by "A Spectator," is too complex and too important for anything like adequate discussion within the conventional limits of a letter; and I must beg my readers to believe that I do not in this communication pretend to do anything more than skim over the surface of the subject in the most superficial manner.

The first obvious fact which suggests itself is, that the earliest arts of which we have any record were developed in connexion with personal attire; the second is, that these clothing arts were in ancient times held in high respect, and that the good housewife is commended in the Scriptures for the labour and time she bestows upon the manufacture and ornamentation of her domestic draperies.

Foremost amongst ancient nations stands Egypt, and chief amongst her decorative arts were those pertaining to textile fabrics, embroideries, and personal ornaments. Solomon praises the beauty of her carpets and the fineness of her linens; and centuries later, Tyre still imported the rich embroideries of Egypt, and counted them amongst her most valuable possessions. The remains of Asiatic art are mainly sculptural, yet the parallelism of the arts of clothing and the decorative arts can there also be traced. The Chinese and Japanese, alike remarkable for the richness of their costumes, had already made considerable advances in the art of painting; whilst the Indians and the Persians, amongst whom it might almost be said dress was non-existent, were still ignorant of any higher art than the rudely-sculptured hieroglyphics of their rock-cut temples.

The study of dress and embroidery gave the impulse to art in Greece; and the shawl of Alcisthenes, made 400 years B.C., upon which were worked a galaxy of gods and goddesses, and a portrait of the illustrious owner himself, was a *chef-d'œuvre* of decorative art. The finest samples of Greek pottery and sculpture which have been preserved to us, or of which we have any record in history, were indeed produced during the prevalence of a dominant passion for personal adornment. The evidence of this is found, not only in the elegance of the prevailing fashions of dress, and the variety and beauty of its associated embroideries, but equally so in the tastefully varied and elaborate decorations of the hair and head, and the magnificence of the jewelry universally worn; whilst the greatest painter of the age was praised by Lucian over all others for the surprising truth, elegance, and flowing lightness of his draperies.

Amongst the Romans, the arts rapidly degenerated; but whether that degeneration preceded or followed that which certainly took place in all matters of personal adornment, both civil and military, I will not here attempt to discuss. The fact sufficient for my purpose is, however, beyond dispute; that the marvellous combinations of richness and simplicity, of variety and unity, of ornament and utility, which prevailed in Greece, were very early and utterly lost in Rome. The Greeks clothed the body without concealing it; and each addition to, and enrichment of, the dress, was so skilfully arranged that it seemed but the more to reveal the beauty of the form beneath. This surprising faculty of adjusting and elaborating the manifold draperies with which they robed themselves, adapting each dress to the condition and wants of the wearer, and infusing the spirit of art into all, did not descend to the Romans; and all beauty and variety of costume were ultimately sacrificed by that nation in favour of the universal toga,—a garment which has proved, in the hands of later artists, as fatal in its effects upon modern, as it ever was upon ancient, art.

Thenceforward, to the end of the twelfth century, we are as little concerned with art as art was with dress. Humanity of these dark ages had indeed, lapsing into barbarism, cared little for one, and nothing for the other, and had well-nigh forgotten the use of both. It was not until the beginning of the thirteenth century that art again showed any conspicuous signs of vitality. Then, again, marching slowly forward hand in hand with the clothing arts, and culminating in the sixteenth century with the works of Leonardo da Vinci, Michelangelo, Raffaelle, Titian, and Correggio, we find that in no other period of European history had all classes of society affected greater magnificence in personal attire, or exhibited more taste, skill, art, and ingenuity in the manifestations of their exuberant love of display.

But the lamps which burnt thus brightly during three centuries over Italy, Germany, and France, flickered but faintly and fitfully in

the uncongenial atmosphere of England. The earliest signs of art revival were here met in 1364 by the sumptuary laws and penal ordinances of Edward III.; and in successive reigns, to the middle of the fifteenth century, every fresh manifestation of vitality was the signal for further legislation and more stringent statutes. Yet the strong arm of the law would probably have been still too weak to arrest or hold in subjection a sentiment so universal and dominant of the human faculties, had it not enlisted into its cause an army of volunteers, whose fanatical ravings made the centuries dolorous. But civil, religious, and social persecutions proved too much for human endurance, and under their combined influences England remained without national art and without native artists until the seventeenth century.

The fitful and feverish history of the arts and costumes from this period is closely interwoven with the political records of the country, and infinitely too involved for treatment in this sketch; but if any one still believes that I have unduly estimated the influence of dress upon art and national taste,—if he still doubts that "love of finery" is the potential germ which, under intelligent culture, grows and fructifies into the mature fruit of highest art,—let him pursue the subject for himself from the date at which I have left it, and I do not fear but his ultimate judgment will wholly vindicate my own, for he will find that corelation of growth is as certainly a mental as a physical law in biology, that the human faculties have a bilateral tendency, and that if their growth is persistently checked in one direction, they will surely cease to develop in the other; and finding that the penalties of the law, the anathemas of the clergy, the satire of the "reformer," and the still worse cruelties of domestic tyranny have united to stamp out every effort of the human mind to worthily clothe the human body, as though the contemplation of filthy rags were an ennobling study, and the physical degradation of man, created in the image of his Maker, an acceptable sight in the eyes of the omnipotent God, he will no longer think it remarkable that we have grown up as a nation in besotted ignorance of art and in callous indifference to its beneficent influences.

Yet love of dress is not, in my estimation, a universal good; neither do I believe that all the virtues follow in the train of art. The mountain stream will bring down some refuse, and man's noblest aspirations, still testifying to original sin, will ever be degraded by contact with the sordid facts of material life, through which alone they can find expression. But with this aspect of the question, as I have already said, I am not at present much concerned. My theme has been "Dress in relation to the Decorative Arts and Painting," and if I have proved their corelation of growth in the past, I do not less confidently affirm it of the present. We are confessedly the most inartistically dressed nation of the earth, and I have yet to discover in which department of the fine arts we can claim pre-eminence.

C. Henry Whitaker.

METROPOLITAN IMPROVEMENTS AND POPULATION STATISTICS.

In the course of a lengthened and exhaustive financial statement which was made recently by Mr. Dresser Rogers, chairman of the Finance Committee of the Metropolitan Board of Works, some highly interesting facts were disclosed as to the improvements which have been made in the metropolis during the last ten or fifteen years, and also some equally interesting statistics regarding the population and sanitary condition of the metropolis generally.

Referring to improvements, Mr. Rogers stated that the great improvements now being carried out in the metropolis were gigantic in their character, which was almost revolutionising the appearance of London, and they could not fail to be of the highest importance as far as sanitary measures were concerned. Adverting to the question of dangerous structures in the metropolis, he said that during the past year the Finance Committee had had them very frequently under their consideration, and scarcely a meeting passed without having reports from the accountant with regard to the dangerous-structure fee account. Objections had been taken to the working of the Act of Parliament throughout the metropolis, but this he attributed to the fact that from year to year the Legislature of the country was casting duties on the Board entailing considerable responsibilities with regard to public matters of great importance to the inhabitants of the metropolis, and these duties were thrust upon the Board by the House of Commons without giving the Board a fair opportunity of recouping the ratepayers for the expenditure incurred.

Referring to the population and the subject of sewers and drainage, he said that the population of the area over which the Board had charge remained much the same as last year, namely, about 3,266,987, and the number of houses 419,642; whilst the acreage was 75,490 acres, and the area of taxation 117 square miles. The total length of main drainage sewers was now eighty-two miles, exclusive of old sewers, which amounted to 165 miles in length. The total length of local sewers constructed by vestries and district boards since the year 1856 was, at the present moment, 722 miles in length. The rateable annual value of the metropolis last year was 20,367,298*l.*, but during this year it had increased to 20,644,000*l.* The finances of the Board comprised an income and an expenditure of more than 750,000*l.* per annum. The statement went into lengthened details upon a variety of other financial topics, including loans to various public bodies and vestries. The sale of ground-rents during the past year also formed a prominent feature in the statement, from which it appeared that they included Southwark and Westminster communication, 29,128*l.* 8s. (equal to twenty-six years' purchase); Victoria Park approach, 6,278*l.*, or twenty-one years' purchase; Southwark Park, 500*l.*; Whitechapel improvement, 658*l.* 19s. 10d.; Kensington improvement, 56,992*l.*, or twenty-five years' purchase; Mansion House-street, 11,249; Stingo-lane improvement, 3,575*l.*; Park-lane improvement, 29,389*l.*; and Wapping and other improvements, 201*l.* 17s.; making a total recoupment of 138,000*l.* It further appeared from the statement that during the year 3,500*l.* had been received from an abortive scheme known as the Waterloo and Whitehall Railway Company in satisfaction of the Board's claim on them for money expended in carrying out works, which they were empowered to have done under their Act of Parliament, by the Board on the Thames Embankment. The value of surplus land was 1,232,812*l.* this year, as against 1,795,291*l.* in the estimates for last year, and Mr. Rogers explained that the reason for the reduction was, in addition to the sales, that the architect had been enabled, during the past year, from circumstances that had occurred, to give a truer estimate of the value of the surplus lands than formerly.

This statement gave rise to a remark from Mr. Newton that he thought it unfortunate the statement should go forth that their surplus lands were worth less than last year; and he added, speaking from his experience in the works committee, that he did not think the vacant land had let below the architect's estimate, in proof of which he said that a few days ago a plot had been sold for twenty-six years' purchase, and in many cases even a higher price might be obtained.

THE INSTITUTION OF CIVIL ENGINEERS.

On the 9th inst., the paper read was "On the Geological Conditions affecting the Construction of a Tunnel between England and France," by Mr. Joseph Prestwich, F.R.S.

The author, in this paper, reviewed the geological conditions of all the strata between Harwich and Hastings on one side of the Channel, and between Ostend and St. Valery on the other side, with a view to serve as data for any future projects of tunnelling, and to show in what directions inquiries should be made. The London clay, at the mouth of the Thames, was from 200 ft. to 400 ft. thick, while under Calais it was only 10 ft., at Dunkirk it exceeded 264 ft., and at Ostend it was 448 ft. thick. He considered that a trough of London clay from 300 ft. to 400 ft., or more, in thickness extended from the coast of Essex to the coast of France, and, judging from the experience gained in the Tower Subway, and the known impermeability and homogeneity of this formation, he saw no difficulty, from a merely geological point of view, in the construction of a tunnel, but for the extreme distance,—the nearest suitable points being eighty miles apart. The author, when considering the Palæozoic series, to which his attention was more particularly directed while making investigations, as a member of the Royal Coal Commission, on the probable range of the coal measures under the south-east of England, showed that these rocks, which consisted of hard Silurian slates, Devonian and carboniferous limestone, and coal measures, together 12,000 ft. to 15,000 ft. thick, passed under the chalk in the north of France, outcropped in the Boulonnais, were again lost under newer formations near to the coast, and did not reappear until the neighbourhood of Frome and Wells was reached. Supposing the strike of the coal measures and the other palæozoic rocks to be prolonged from their exposed area in the Boulonnais across the Channel, they would pass under the cretaceous strata somewhere in the neighbourhood of Folkestone, at a depth estimated by the author at about 300 ft., and near Dover at about 600 ft. The author considered that it would be perfectly practicable, so far as safety from the influx of the sea water was concerned, to drive a tunnel through the palæozoic rocks under the Channel between Blanc Nez and Dover, and he stated that galleries had actually been carried in coal, under less favourable circumstances, for two miles under the sea, near Whitehaven. But while in the case of the London clay the distance seemed almost an insurmountable bar, here again the depth offered a formidable difficulty. He was satisfied that on geological grounds alone, it was in one case perfectly practicable, and in one or two others it was possibly so; but there were other considerations besides those of a geological nature, and whether or not they admitted of so favourable a solution was questionable.

SCHOOL BOARD SCHOOLS FOR BATTERSEA.

The London School Board Schools in Bolingbroke-road, Battersea, were opened on the 1st instant, without any ceremony. They occupy an open position, rather more than three-quarters of an acre in extent. The buildings are set back about 50 ft., and are surrounded by separate playgrounds for girls, boys, and infants, the area of which, allowing 25 square feet for each child, would be sufficient for nearly 1,300 children.

The schools consist of a central mass, two stories in height for the boys and girls, with other buildings, one story high for class-rooms and infants' school. The general plan is the H form, the centre room for boys being 42 ft. 9 in. by 21 ft., with two class-rooms on each side, each 24 ft. by 16 ft. 6 in. These are connected with each other by double sliding doors, and with the general room by glass doors.

The boys' entrance-lobby, lavatories, and cap-room, are in the centre of the group; the girls' entrance and staircase, also with lavatories and bonnet-room over that of the boys, with W.Cs.; and over these is the mistress's room overlooking the girls' playground. The girls are provided with a general room, 42 ft. 9 in. by 21 ft., and one class-room. Another room, 24 ft. by 16 ft. 6 in., with a north light, is intended to be used by both as a drawing-class room, with separate access.

The infants' school contains a general room, 38 ft. by 21 ft., with a gallery calculated to accommodate 73 children; a babies' room, 20 ft. by 18 ft., with gallery for 56 children; and class-room, 16 ft. 6 in. by 13 ft., with desks for 30 infants.

The managers' rooms, 18 ft. by 14 ft., with lavatory and W.C., adjoins the infants' school entrance, with the infants' lavatory, cap-room, and W.Cs. behind, connected with the covered playground.

At the back of the main building a wing contains the master's room, commanding the boys' playground, over which, in two stories, are the caretakers' dwellings.

All the school and class rooms are warmed by grates intended to consume the smoke, and supply warm fresh air to the rooms from a chamber at the back, fed from the outside; and connected with flues to carry the warm air to the rooms on the first floor. All the rooms are ventilated by gratings connected with a cavity adjoining the flues. In addition to these, fresh air is conveyed by a shaft to the upper part of each room, with extracting flues for the vitiated air.

The boys' and girls' schools are provided with sitting accommodation, in pairs, for 240 boys, and 120 girls, with drawing-class room for 40 more. Allowing 9 square feet for each child, the rooms would admit of 276 boys, and 144

girls. The infants' school provides sitting-room for 153 children; at 8 square feet for each they would accommodate 172.

The buildings are in the Gothic style, of simple character, and are built with yellow stock bricks, with sills and lintels, and occasional bands of Bath stone, with red brick arches to the windows and doors.

The amount of the contract was 5,370*l.*, and the schools have been built by Mr. John Spink, of Battersea, under the superintendence of the architect, Mr. John W. Walton, of 12, Buckingham-street, W.C.

THE REPLY OF THE RAILWAYS.

THE circular recently addressed by the President of the Board of Trade to the several railway companies, in which the companies are, by implication at least, charged with neglecting the means for securing the safety of the travelling public, by not having provided works and station accommodation commensurate with their constantly increasing traffic, has been followed by replies from the chairmen of nearly all the great companies, in which the latter warmly defend themselves against the charges made by the Board of Trade authorities. A notable feature in these several replies is that which discloses the enormous outlay which has recently been incurred in extension lines, and new and enlarged station buildings by many of the companies concerned.

The statement of the chairman of the London and North-Western Company reveals the fact that during the last five years this company has expended more than 4,000,000*l.* in doubling lines and enlarging stations, in addition to a further expenditure of 2,000,000*l.* on new lines, of which the greater part was laid out to relieve the traffic of existing lines, amounting altogether to about one-ninth of the whole capital of the company. Beyond that sum they have expended during the last two years out of the annual revenue 100,000*l.* per annum almost entirely on refuge sidings and interlocking points. The chairman shows that many of the large stations have been rebuilt and materially enlarged to meet the increased traffic, amongst them being the Euston Station, the area of which has been doubled. Lime-street Station at Liverpool, the chairman states, has been built three times, and the company are now doubling its area at a cost of upwards of 500,000*l.* Stafford and Crewe stations have also both been constructed three times, and greatly enlarged on each occasion, and plans have just been settled for a further enlargement of Crewe station, at a cost of about 100,000*l.* Manchester, Birmingham, Warrington, and many other stations have also been reconstructed and enlarged at enormous cost; whilst Carlisle, Preston, and Bolton stations are now in course of being rebuilt and enlarged. Similar works have for some years been going on, and are now being carried out, on almost all parts of the line, as rapidly as the state of the labour market and other circumstances will permit, and others are in contemplation. The chairman, adds, "On this, as on all railways in the kingdom the stations were laid out originally on what was then considered an extravagant scale, but in the great majority of cases they have now proved insufficient, and as works of different kinds naturally gathered round the stations the task of enlarging them has become not only excessively expensive, but very difficult, owing to the vested interest concerned, which frequently cannot be dealt with without Parliamentary powers, obtained after great delay." Respecting new lines and branches, and additional double lines, the chairman states that a third line was several years ago completed from London to Bletchley, and that a fourth line will shortly be opened, and also, in order to continue these lines into Euston-square, powers were obtained in last session to construct a duplicate tunnel for two lines of rails under Primrose-hill. Plans are also now preparing for further extending these two additional lines to near Northampton. A third line has recently been opened between Rugby and Nuneaton on the up side, for the goods trains, in order to facilitate the passage of the night mails. Two additional lines are already in course of construction between Stafford and Crewe, and the Board are proceeding with arrangements for filling up the intermediate portions so as to complete four lines of rails over the whole distance between London and Crewe. Alternative railways have likewise been constructed in several cases, such as the Whitchurch and Tattenhall, for the purpose of conveying the traffic of South Wales with Birkenhead and Chester, without passing through the busy station at Crewe, the Runcorn Bridge and its necessary approaches having cost more than 500,000*l.* The Lancashire Union lines, the doubling of the line between Liverpool and Huyton, and the new lines from near Manchester to Wigan, make duplicate communications between Manchester, Liverpool, and Wigan and the north. Several branches and tunnels, especially a tunnel three miles and a quarter long in Yorkshire, originally made for single lines of rails, have also been doubled to meet the public requirements. The expenditure on the block and interlocking system is also noticed, the chairman stating that in this department the outlay for some years past has amounted, on an average, to 80,000*l.* per annum, and that sum will be exceeded during the present year. To show the magnitude of these works the chairman states that they have involved the erection of 13,000 new signals, with the corresponding apparatus.

The chairman of the Midland Company has also replied to the President of the Board of Trade's circular, and his statement likewise shows the heavy expenditure which that company has incurred, and is now incurring in new works and station accommodation for their increasing traffic. He states that the amount expended during the last six years upon the enlargement of stations, sidings, buildings, and establishing the block and interlocking system, is 1,766,059*l.* The amount expended during the same period on widening existing lines is 1,233,635*l.*; whilst in duplicating the line between two common points, the sum of 2,390,866*l.* has been expended within the same period. The amount expended in increasing the number of engines, carriages, and wagons, was 2,558,265*l.*, making a gross outlay for the above-named purposes, during the six years, of 7,948,825*l.* The chairman adds, that this expenditure is altogether irrespective of the construction of new lines in progress, and is still going on. He also makes the important statement that the sidings upon the Midland system at the present time exceed 700 miles in length. Respecting the block system, he remarks, that at present it is in operation over nearly 500 miles of the most important portions of the railway, and the further extension of it is being proceeded with as fast as materials can be obtained and the work executed. Similarly, steps have been taken with respect to the interlocking and safety points. As regards the sufficiency of the staff for the proper conduct of the traffic, he states that while the gross receipts from all sources of traffic during the period named have increased from 2,804,436*l.* to 5,026,102*l.* per annum, being at the rate of 79 per cent., the number of servants has increased from 15,882 to 30,006, or 90 per cent., and the salaries and wages paid from 871,728*l.* to 1,852,136*l.*, or 112 per cent.

Sir Daniel Gooch, the chairman of the Great Western Company, in his reply to the Government circular, states that during the last year the company substituted the narrow for the broad gauge throughout the whole distance from Swindon to Milford Haven, representing about 500 miles of single line, and that they contemplate a similar operation in the ensuing year on other important and extensive parts of their system. In effecting these changes, as well as on other parts of their line, the enlargement and rearrangement of stations and sidings, and the laying down where needed of additional lines, have been and will be proceeded with. But the chairman adds, that the question of "station and siding accommodation," referred to in the Government circular, is a complex and difficult one. The fluctuating nature and extent of the requirements of the traffic involved considerations perpetually varying with the variations of traffic in different localities. What amounts to sufficient provision for the safe working of increased traffic by the enlargement and rearrangement of stations and sidings, is a question dependent upon the special circumstances of each locality, and must be dealt with in reference thereto. On this particular point the chairman observes that the directors never hesitate to incur any expenditure which is called for by the demands of an expanding traffic, the reasonsonable accommodation of the public, whether as passengers or as traders, being inseparably bound up with the permanent interests of the company. The chairman "regrets that it should have been deemed necessary by her Majesty's Government to address to this company a letter which contains—by unavoidable inference and implication—charges as to the conduct and management of the company's affairs of so grave and serious a character," and he denies, so far as the Great Western Company is concerned, the charge made by the Government "that there is a want of due care that the permanent way, the rolling-stock, and the station and siding accommodation, are kept up to the requirements of the traffic."

Mr. Castleman, the chairman of the South-western, replies on behalf of the directors of that company, and in doing so, states that the board have adopted every known means for strengthening and improving the permanent way; that a very large expenditure has been incurred in enlarging the station and siding accommodation; and that the work is still proceeding without cessation. Within the past seven years, in addition to the cost of the ordinary maintenance of the permanent way, 250,000*l.* have been expended upon its strengthening and renewal, and the directors have thus been enabled to keep the permanent way and the siding and station accommodation fully up to the requirements of the increasing traffic; and that as regards the rolling-stock the same course has steadily and successfully been pursued. The chairman further states that, some time ago, a very considerable expenditure was incurred at the Waterloo station in erecting a large over-bridge signal-box, with all modern appliances for interlocking signals and points, and an extensive traffic had, for many years, been worked in the Waterloo station. A further large expenditure has been, and is still being, incurred in erecting additional signals and making other improvements on that station. Referring to the absolute block system, he states that out of 664 miles of railway, 419 miles are already worked upon that system; eighty-eight miles additional will soon be brought under its operation, and next year the absolute block system will be further extended. He adds that the interlocking of points with signals has also been carried out by the company to a very large extent, and is in course of further extension.

RAVAGES AMONG BUILDINGS BY A STORM OF WIND.

ON Monday night and Tuesday morning of last week, England and Scotland were visited by an extraordinary storm of wind, resulting in great damage to property, and serious loss of life.

The gale over Sheffield and district, for intensity and disastrous results, has never been equalled in the history of the town. Numerous tall chimneys have been cast down, and other premises demolished. High chimneys, too, which still stand, were seen to rock to and fro in an ominous manner. A catastrophe occurred which has long been referred to as being probable in the event of an unusually rough wind—this was the fall of a square-built chimney, over 150 ft. in height, situated in Trippet-lane. The front part of the premises were used as a sewing-machine manufactory; the next set of workshops, twelve in number, by cutlers. This part of the building was utterly and completely demolished by the massive chimney, and the occupants, numbering between twenty and thirty, of both sexes, were buried in the heap of ruins. After some hours' labour, the police recovered five bodies, mangled and crushed beyond recognition, and it was believed that many more were buried. A fettling shop at the newly-erected foundry of Mr. Hadfield, in New-hall-road, Attercliffe, was blown down, burying two men in the ruins. A square chimney, 40 yards in height, fell at the Norfolk Works, destroying part of the forge and hammer mill. A brick chimney fell at Messrs. Matthewman's works, Milton-street, smashing some steam-pipes in its fall. Part of Messrs. Hornby's vitriol works, Attercliffe, were blown down. The workmen, being at breakfast, escaped. At Guest & Son's, Watery-lane, the high chimney fell, cutting the three-story factory in two. At Messrs. Christopher Johnson & Co.'s, Portobello-street, the chimney fell, breaking through workshops and warehouse. The infirmary and hospitals are full of injured people, and the list of casualties cannot possibly be exhausted herein. The following enumerates some few more of them:—Six shops partly destroyed in Highfields; the police-station, Highfields, considerably damaged; sixteen houses unroofed; Thompson & Co.'s fitting-shops blown down; in Washford-road the churches are more or less damaged; and the

Pavilion and Botanical Gardens partly destroyed. In every street some houses are unroofed and chimneys blown down. The telegraph wires between Sheffield and Barnsley were completely wrecked.

The new Board schools at Walkley stand in a position where they encountered the full force of the gale, and they have sustained very serious damage. The schools are erected in the shape of the letter H, and they were so far completed as that the main principals of the centre roof had been got up. A tremendous gust of wind swept across the hill, and literally lifted the massive framework of the centre roof from off the walls, and dropped it over the front of the building, a great deal of it being smashed to pieces in the fall. The centre walls being thus left without support, were blown down to the floor line. The roofs of the outer portions are not much injured. One of the gable chimneys was blown down, and did some damage. One of the buildings to suffer was the Methodist New Connexion Chapel, which stands at the junction of Walkley-road and Walkley Bank-road.

Instances are not wanting where every chimney in a whole row of houses has been blown down. Such is the case at what is known as the Brick-row, at Hillsbro'.

In Leeds, churches and chapels were terribly knocked about. 20,000*l.* will not cover the damage done. One large building, situate in Lady-lane, injured three men in its fall. Many buildings in the course of erection have been injured to a greater or less extent. At Gildersome, near Leeds, a blacksmith's shop was blown down. At Churchwell, a new co-operative store was much damaged, and great injury to residences was also done. At Halton and Whitkirk, a chimney, fifty yards high, in Meadow-lane, was forced down to the ground, and in its fall cut through the mill and a portion of a dwelling-house.

The Weeton Railway Station, near Harrogate, was blown down, as well as several houses. The same thing occurred at Knaresborough. The North-Eastern Railway engine-shed at West Hartlepool is almost a wreck, and various stacks of chimneys have been unable to stand the violence of the hurricane.

At Halifax, a new brick chimney, just completed for the saw-mill in course of erection in Horton-street, for Messrs. Bedforth & Son, builders, was blown down, and fell on a shed immediately under it, killing a youth, and seriously injuring three sawyers. The chimney was 40 yards high, of which 13 yards fell. The lime had not dried. Three of the pinnacles at the foot of the spire of Square Congregational Church were blown down from the tower. The pinnacles are in double sets at each corner of the tower, the set at the south-west corner falling into the yard, and smashing gravestones. At the north-west corner, one of the pinnacles fell through the roof, its companion having a great rift in it, and it was momentarily expected to come down.

At Dewsbury Moor, a newly-erected building (not occupied) was demolished, and a house at Earlsheaton was rendered uninhabitable, the roof being completely lifted off the walls. Considerable damage was done to St. John's Church, Dewsbury Moor. The large new chimney of the Dewsbury and Batley Brewery Company was blown down, and other damage was done to the works. The new Board Schools, in course of erection by the Soothill School Board, were totally unroofed, and the buildings were otherwise seriously damaged. Many buildings, including the *Dewsbury Chronicle* office, were partially unroofed. A foundry was partly demolished at Heckmondwike, where a great deal of damage was done. At Batley, one of the four pinnacles of the tower of the parish church was blown through the roof, 6 square yards of which it carried away into the church, causing damage to pews.

At Aberdeen, and elsewhere in Scotland, much damage to buildings also occurred.

The Projected Railway to Roundhay Park, Leeds.—At a meeting of the subscribers to the proposed Leeds, Roundhay Park, and Osmondthorpe Junction Railway, it has been unanimously resolved:—

"That having regard to the very limited amount of support given to the project, and to the formal expression of dissent received from the Corporation of the borough, this meeting is of opinion that the promoters will not be justified in prosecuting the Bill in the ensuing session of Parliament, and that unless the measure receive a more general support, the Bill be withdrawn."

CONSTANTINOPLE.

A special section has been established in the Council of State for the consideration of all matters connected with public works. Of this section his Excellency Edhem Pasha, ex-minister of public works, has been named president, with Kiani Pasha, Mustapha Assym Pasha, and Pavlaki Mussurus Bey as colleagues. According to the *Levant Herald*, M. Guérard, engineer, as the representative of M. Pascal, has recently submitted to the Porte that gentleman's plans for the harbour and other works at Dédé-Agatch, Varna, Salonica, and the Stamboul terminus at Sirkedji-Iskelessi.

The Turkish papers publish an official communication announcing the arrangements made by the Government for carrying out the new cadastral survey and valuation of real estate in Constantinople and its suburbs as the basis of the assessments contemplated by the recent reforms. The existing plans and registers are no longer correct, and are often a cause of contention and confusion.

The capital and its suburbs will be divided for the purpose into a certain number of cadastral districts, and the Government surveyors, in conjunction with professional valuators and the *imams* (priests) and *mouhtars* (head-men) of the quarter, will for each district prepare an accurate list of the real estate contained within its boundaries, the houses and shops unoccupied and occupied, whether by tenants or owners. When the survey is commenced all owners must exhibit their title-deeds; but if the owners be in the provinces, or the title-deeds themselves be elsewhere than in Constantinople, a delay of five months from the beginning of the survey will be allowed for the presentation of these documents; but should that lapse of time be exceeded, the defaulters will be liable to a fine of 10 piastres per 1,000 upon the estimated value of their properties.

THE PROPOSED MEMORIAL OF THE LATE SIR WILLIAM TITE.

It may be remembered that, after the decease of Sir William Tite, M.P., who represented the parish of Chelsea at the Metropolitan Board of Works, the vestry of that parish made a stir with regard to erecting a monument to Sir William on the Chelsea Embankment, and Sir Charles Dilke, M.P. for the borough, forwarded a cheque for 100*l.* Several of the vestry proposed, also, that the parish, which owed so much to their late member of the Board of Works, should bear part of the expense, and some of the vestrymen talked of their own desire to subscribe.

To carry out the design a "Memorial" Committee was formed, and, at the last meeting of the vestry, the committee submitted a report recommending that the project be abandoned, and this course the vestry agreed upon.

The friends of the late Sir William Tite will no doubt be much surprised, if not something else, at this issue; for the step taken by the vestry unquestionably hindered others ready to erect a substantial record to the memory of Sir William Tite; and it may be now a difficult task to get friends together for the desired object.

THE ENGRAVING FOR THE ART-UNION OF LONDON.

DUTCH TRAWLERS LANDING FISH AT EGMONT.

It appears from the last report of the Council of the Art-Union, that the plate of "Tilbury Fort," after Stanfield, is still so much in request, and the eight plates of "Coast Scenery," given two years ago, were so popular, that it was thought another marine subject might please; and accordingly Mr. E. W. Cooke, R.A., was commissioned to paint, for the Society, one of his charming pictures representing seafaring life on the coast of Holland. We have here a couple of the full-bowed Dutch boats, much such as those in Mr. Cooke's picture in the Academy this year—lying on the shore near Schevening—the tide being so low that the men and women can wade through the shallow water to carry the baskets of fish to land. We seem to catch the smell of the sea, and to hear the waves breaking against the hulls of the vessels, and driving the shells and pebbles before them as they subside into ripples on the beach.

The boats are painted with the artist's firm solid touch, and the sails—one in shade, the other lighted by a watery gleam of sunshine, which is relieved against a black threatening cloud behind it—form a striking, but not violent contrast. The subject has been capitally engraved in pure line by Mr. Arthur Willmore, almost the only landscape-engraver in this style now left; unfortunately, the more rapid and economical methods of mezzotint, or chalk engraving, being alone patronised by the print-publishers, though nothing can attain the brightness and power of the pure line manner.

We learn that the prizes at the ensuing distribution will comprise, amongst other works, and the right to select pictures from the public galleries, a number of statuettes in bronze of the painter Cimabuë, from a model by Mrs. Fennessy, for which, as a pupil in the Bloomsbury School of Art, she received the Queen's Gold Medal last year, and the warm commendation of many critics.

WHITBY JET AND ITS MANUFACTURE.*

What is jet? This is a question often put, but never satisfactorily answered. Nearly all the jet workers have an opinion on its origin, and most of them, in common with the greater part of the inhabitants of Whitby and its neighbourhood, believe it to be of ligneous origin. Some, however, believe it to be of mineral origin, and others think it combines the two. Taking the opinion of Mr. Martin Simpson, the curator of the Whitby Museum, who has studied the geology of this district exceedingly well, and with whom I have talked on this subject, he put his theory as follows:—"Jet is generally considered to have been wood, and in many cases it has undoubtedly been so; for the woody structure often remains, and it is not unlikely that comminuted vegetable matter may have been changed into jet. But it is evident that vegetable matter is not an essential part of jet, for we frequently find that bone and the scales of fishes have also been changed into jet. In the Whitby Museum there is a large mass of bone, which has the exterior converted into jet for about ¼ in. in thickness. The jetty matter appears to have entered first into the pores of the bone, and then to have hardened, and during the mineralising process, the whole bony matter has been gradually displaced and its place occupied by jet, so as to preserve its original form."

To this latter opinion I am inclined to agree, for it has the appearance of a substance that has distilled from the rock, and in some cases has impregnated vegetable, and in some other cases animal substances, while in others it has simply filled up a fissure in the rock, and solidified. In some specimens I have seen the grain, apparently of wood, distinctly; in others, scales and bones of fishes; and in one of the best specimens that have been found here, the mass in form and structure was that of a tree, with bark, knots, and roots, and in the curled portions of the roots, stones and soil conglomerated were imbedded.

Whatever may be the actual formation of jet, that known as the hard jet is most worked, it not being thought worth while working the soft species, since the importation of the Spanish article. The hard jet has a specific gravity of about 1·238, has a conchoidal fracture, a resinous lustre, it gives off a bituminous odour when burnt, is an electric, and a bad conductor of heat. It was formerly obtained in the largest quantity by working in the cliffs, by a process called "dressing" (very dangerous work),—that is, by clearing away and hewing down the cliff-sides till jet ends protruded; the seams were then followed till exhausted. Some seams have realised as much as 1,000*l.*, and have been discovered in a short time. At other times, however, men have been employed for weeks, occasionally months, and have found nothing; in fact, have been on the point of giving up, when they have unexpectedly come upon a seam that has fully repaid all their labour.

There are somewhat more than twenty mines at work at present; about 200 miners, whose weekly wages vary from 24*s.* to 26*s.* Owing to these low wages, many men, who might otherwise be at jet-mining, go to the ironworks in the district where they get paid much better. A short time since there were more than 400 miners, but they have gradually lessened to the number before mentioned. Again, jet-mining seems to be a sort of hazardous undertaking, as far as profits are concerned, for often large areas have been tunnelled, and nothing found; and

* From a paper by Mr. John A. Bower read at the last meeting of the Society of Arts.

others have sometimes taken up mines that former workers have given up in disgust, and reaped a fine harvest. Both the jet cliffs and mines are rented by the workers. By far the largest jet-miners are W. Thompson and J. Turner, both of Whitby. The former has carried his business on most successfully since the year 1860. Rough hard jet varies in value from 4s. to 21s. per pound, according to its closeness of texture, direction of grain, freedom from flaws, and breadth for working. The soft jet varies from 5s. 6d. to 30s. per stone; the price of the Spanish is about the same as that of the English soft jet. The Whitby hard jet is the best in the world, not only for working, but it will take a fine polish, which it retains for years, and it can be worked up into finer designs on account of a greater tenacity and elasticity that it has over other qualities.

The skin has first to be removed, which is done by the workmen chipping the surface with a large iron chisel; the stripped portions are then taken to the sawing bench, where the jet is sawn up, with the keenest eye to economy, into the various shapes and thicknesses, according to the articles for which they are required. The pieces are then given out to the carvers or turners, as the case may be. In the case of the former, if he requires to make it into a brooch, locket, or chain-link, he takes it to a grindstone, which he works by a treadle, and brings the edge, which he keeps turning round, on to the face of the stone; it soon then becomes oval, round, square, or any geometrical shape required. The surfaces are next both ground smooth; it is then fit for carving. Very often—I might say rarely is it otherwise—the artist in jet who undertakes this is no draughtsman whatever, yet he can cut the most beautiful and truthful faces in high relief, the most delightful floral designs,—the latter often without any pattern at all; the most tasteful monograms, and other designs equally good, without being able to sketch the simplest object on paper, and often not being able to write his own name. It was only last week a striking instance of this kind came under my own notice. I saw a workman, one of the best hands in a large shop in Whitby, able to cut the most elaborate monograms, the most accurate portraits, the most elaborate foliage, but quite unable to sign his name. Is it not important, then, when we have many such instances, that we in Whitby should have not only elementary classes, but also a School of Art? I remarked on the economy with which the jet was cut up. I am informed that some masters, by care, get one-fifth more work out of the same amount of material by strictly observing this.

The most complete workshops we have in the town are those of Mr. Bryan, who has lately gone to considerable expense in rearing not only a large structure, but has added every possible convenience conducive to the health and comfort of the men.

I have heard Mr. C. Bryan, whom I named just now, say that he was willing to take fifty little London street Arabs as apprentices, and able, too, to guarantee that more than half should turn out first-rate jet workers; and from frequently visiting these workshops I have every reason to believe this is no exaggeration.

According to the classes of work so do the wages of the workmen vary; some idle and careless hands getting from 16s. to 1*l.* 1s. per week; others earning from 30s. to 50s. weekly; and the average wages for boys, from twelve to fourteen years, being 8s. to 10s.

In conversations with the masters on an improvement in the patterns, or the introduction of something new, I am told that if customers improved in taste, and there were any demand for articles of a better design, they would be ready to do them; but when they made a fresh effort by bringing out a good and new design, it frequently was on their hands for a long time, or, to use their own expression, "it would not sell"; so that much improvement in this class of goods depends on the public taste.

The designs would be greatly improved if we had a good art school in Whitby; this is very much required, and many of the artizans have expressed a strong desire that efforts should be made to get them one. The only school we have in connexion with drawing is one under the auspices of the Mechanics' Institute, but although it is doing much good to the few who attend, many more would avail themselves of it did it afford more advantages; the want of a larger selection of good copies, designs, and models is greatly felt.

A good museum of works of art, occasionally localised in the town, would do very much to help the men and improve the art, and repetition of such inducements as have lately been given by the Turners' Company would most assuredly bring out the taste and skill of the workman.

ARCHITECTS' CHARGES.

SIR,—It is more interesting than instructive to observe the exceptional difference of opinion among architects and surveyors touching their professional charges, as evidenced in the case of Collins *v.* Ullman, reported in your last issue. On the one hand, we have a grave and weighty Institute,—chartered by King William IV., royalised by Queen Victoria, and supported (with idiosyncratic exceptions, such as the elder Pugin, proving the rule) by the genuinely eminent members of the profession, such as Cockerell, Barry, Smirke, Donaldson, Tite, Scott, &c.,—setting forth a system of remuneration; and, on the other hand, we have "Mr. Henry Jarvis, district surveyor," who "repudiates altogether the Institute and the Institute's scale of charges," and is thus supported by lesser lights, taking official scale. The reason of this somewhat rude rebellion seems to be that it is the custom of the dissentients to charge the same, or "never more than 5 per cent., whether the works were difficult or not, or whether they involved additional trouble and skill or not." But, of course, no sensible men could accept such a system as generally binding or otherwise than as generally wrong; and so the jury said by their verdict. For, in these days of free trade, cheapness is matter of comparison rather than of compulsion; and we have, many of us, considered our "bargains" at our leisure, and counted the cost of one man underselling his neighbour. The direction of Baron Cleasby, that "the rules of the Institute were a safe guide both for himself and the jury" is of immense importance, while any advocates of cheap architecture have still no cause of complaint. E. L. TARBUCK.

THE CONSTRUCTION OF THE NATIONAL ALBERT MEMORIAL.

SIR,—My mind has been much exercised of late on the constructional aspect of the National Albert Memorial; but as I am not in possession of full information, the question I propose asking must be taken with a qualification. It is this:—"Is the monument an illustration of sound constructional principle?" I do not refer to the strict principles of "Puginism," but to those which could suggest themselves to any non-professional individual. Were such a one expressing himself, he would probably take this position. Here is a shrine, with a roof of immense weight, sustained by pillars, which, by some occult reason, appear efficiently to discharge a duty I should not have supposed them competent for. The architect must have made some compact with statical law, and so insured the safety of his design.

Well, the reply will be, you may rest satisfied; the secret lies in certain iron cross-girders, of immense strength, which relieve the substructure of outward thrust; and hence security. The non-professional might accept such an explanation; but this, if I am not mistaken, will not satisfy the thoughtful professional; and I open up this question, not out of any disposition to cavil, but with a desire to elicit a right theory of construction. Let us reason out the matter.

When an architect brings unresting forces into play by arch-construction, he provides means of resistance which bring these forces into a state of equipoise. When he constructs, for instance, a tower or spire at a church crossing arch—pierced,—he has abutments in the nave, and chancel, and transepts. Take away these abutments, and the points of support must be altered accordingly. But I presume it will not be considered a piece of hyper-Puginism to say that this alteration cannot recognise beams or ties of any kind, as legitimate, or, at least, satisfactory construction.

This case is, I take it, precisely analogous to the Albert Memorial, in which there is a heavy superstructure depending for its support on means which do not make themselves apparent; and although I do not assert that means of construction should be evident in all their unadorned savageness, they should be visible enough to satisfy the spectator that his object of admiration is stable; and this, I venture to say, is what cannot be said of the Albert Memorial. It *is* stable; but its stability requires explanation, and whenever that explanation is not forthcoming there must be a feeling of dissatisfaction; for it is evident that the four points of support do not unaided fulfil the purpose of support.

An individual may feel himself secure under a church-roof with visible tie or resisting buttresses, or under an arch with proper abutments; but, for aught he can learn from observation, his position under the Albert Memorial might not be so. G. S. A.

"HOMES IN HACKNEY WICK."

REPORTS of the proceedings of the Hackney Wick District Board of Works, in the local papers, show that attention has not been directed a moment too soon to the sanitary condition of the homes and streets in Homerton and Hackney Wick. We are glad to observe, that a motion was carried to institute an inquiry, and that a sanitary committee are to specially bring up a report upon the matter. We will not anticipate the report, but we shall be prepared to supplement it should it fall short of what we expect it to be. We know the exact state that the district was in when we first visited it, as also its condition within the last week. The state of the streets and roads, and of the foul march sewers, alluded to by us, is to receive immediate attention, and it is to be hoped that the drainage and foundations of the dwellings of Homerton and Hackney Wick will also receive special attention in the report promised. The local *Express* follows up its observations, in last issue, with the following words:—

"The necessity of seeing ourselves 'as others see us' is being forced upon us in a remarkable manner. Our contemporary, the *Builder*, has sought out in our midst, and held up to our gaze a grim array of terrible facts. As a district, we fear we must stand convicted of the offences which are charged against us. It would be an exhibition of the most contemptible species of false pride were we to attempt to put a gloss on the hideous truths that have been laid bare within the last few weeks by our enterprising and painstaking contemporary. The deservedly high reputation of the *Builder* would be a sufficient guarantee for the reality and truthfulness of the picture which it has given us of some of the 'homes' which exist in the borough of Hackney, were it not that the calm and unimpassioned tone of its remarks indicates that the circumstances which are described are real.

We have already commented upon the evidence adduced by the *Builder* in reference to the 'Homes' in Homerton; and our readers are already familiar with the really startling revelations which have been made concerning that district. Now we have to face a new array of facts, and to consider the fresh results which have been arrived at through the efforts of our contemporary, and we accordingly find that Hackney Wick is another district which 'awaits the paternal consideration of the District Board of Works.' . . . .

Those of our readers who have perused the extract from the article given by us in our last week's impression will have learned some interesting, but withal some remarkable, facts concerning the nature of the soil upon which Hackney Wick is built. Many persons will, no doubt, learn these facts for the first time. To those who have not read the article we commend its careful study,—it is eminently instructive.

We feel that we cannot dismiss this vitally important subject with the present article. A deep sense of public duty will compel us to return to it again. Meanwhile, the thanks of the whole district are due to the editor of the *Builder*."

WATER IN THE NORTH.

AT a recent meeting of the new Local Board of Health at Bishop Auckland (a town under the wings of the Bishop of Durham, and of considerable population and trade), the clerk read the following offer to supply the town with water, from a member of the Board:—

Gentlemen,—In accordance with your request, I hereby give you a written offer of the terms and conditions on which I am willing to undertake the pumping and supplying the water to the town. 1. I propose to supply water *free of charge* for twenty-five years to all ratepayers within the Board of Health district who require it for domestic purposes only, and also the water required for watering the streets. 2. All persons using the water for commercial or manufacturing purposes, to pay on the same scale of charges on the rateable value of their premises as at present, or by meter, in cases where I consider it necessary, at the rate of 9d. per 100 gallons. 3. I will keep in repair all existing works and mains, but if the Board should at any time from the extension of the town, or other causes require additional storage, reservoirs, or new mains, such new works to be paid for by the Board. 4. The Board to delegate to me, for and during a term of years to be agreed upon, the existing plant, and full powers for obtaining and filtering the water, and for making the necessary erections, excavations, and other works, for the erection of a turbine wheel, and supplying the water power, and for excavating in the streets or other public places when necessary for repairs or making connexions. 5. The inspector of nuisances appointed by the Board to continue as part of his duties to inspect all water-taps, and report any waste of water to me. I am prepared to give ample security for carrying out of the contract.—JOSEPH DUFF."

Several members considered it a very fair offer but said, if accepted, Mr. Duff would have

vacate his seat at the Board. Mr. Duff said it would be quite a relief for him to resign. His only motive was to benefit the town through his offer. A member said it was simply a present of 10,000*l.*, according to the present water-rate for domestic purposes, but wished to know if the Board could give the donor a lease for twenty-five years or more. The clerk replied that the Board could not grant the lease. A member, putting on his hat whilst leaving the room, said warmly, "Well, there it is again: cross my name out of the Board of Health. I am disgusted."

It appears that this liberal offer will not be carried out; and unless the London Board spurs the Bishop Auckland Board to instant action, years will elapse before a good water supply will flow into the town.

ARCHITECTS BEFORE THE JUDGE.

A rumour, believed to be well founded, that a representation is to be made to the Home Office by the learned judges of the superior courts, as to the necessity of appointing official architects and surveyors for criminal proceedings, renders the following account of Mr. Justice Honyman's raid upon the county of Durham's professional men, of more than ordinary interest.

In last week's *Builder*, a report appeared of the judge's censure on a youthful architect, and his Lordship having ordered a fresh indictment, Mr. Joseph Hall Morton, of South Shields, architect, was subpœnaed to give evidence in place of his pupil. Mr. Morton, in answer to counsel, said,—I produce a plan of the place called "Jacob's Ladder." I made it. It is an accurate one, and is on an eighth scale.

The Judge.—Is this the plan we had the other day? I think I recognise an old friend with a new face.

Counsel.—It is the same as we had the other day, with some measures put on, and amendments: it is embellished.

The Judge.—Did you, Mr. Morton, make that attic plan?

Mr. Morton.—Yes. I assisted my clerk to make it. It is made to scale.

The Judge.—You say you assisted your clerk to make it. He said last time that you left it to him.

Mr. Morton.—I overlooked it.

The Judge.—In one sense you did *overlook* it, for your clerk told me that it was not made to scale.

Mr. Morton.—That plan is altered. It is made to scale. It has been corrected.

The Judge.—In what way?

Mr. Morton.—In the blue wall.

The Judge.—I am almost certain it is no such thing. When I had occasion to measure this before, your clerk told me it was no good measuring it because this part was not made according to scale. Did you go with your clerk when the plan was made?

Mr. Morton.—Yes, my lord. When I went to make the plan I could not get up into the attic. The doors were locked.

The Judge.—Upon my word, this is really preposterous. You go to make a plan, and when you found the doors locked you could have got the keys or applied for them.

Mr. Morton.—I went yesterday, but could not get them.

The Judge.—Be careful. Do you mean to say there has been any alteration made in lifting this wall at all?

Mr. Morton.—The wall has been washed out and altered.

The Judge.—Then I am to take it that both the ground floor and the attic are still together. I really hope the next time you make a plan you will not make it like this. This looks as if it were all one level. You must be cautioned against this sort of thing. All these are drawn on the floor, and this is 17 ft. high. You ought to know if you call yourself an architect that nobody ever makes a ground floor and upstairs and blends them together to make them look like one. It is most disgraceful carelessness.

Having disposed of the above case, his Lordship tried another case of murder, and this time Mr. Thomas Edmunds Oliver produced a plan he had made.

The Judge.—Which is Bainbridge's house on the plan?

Mr. Oliver.—I believe Bainbridge's house is No. 15.

The Judge, throwing down his pen.—You *believe*. Really there seems to be a fatality about plans in the place. I asked the witness which is Bainbridge's house, and he says he "thinks it is No. 15."

Before answering other questions, the witness measured the distance on the plans, and his lordship, after strongly complaining that the witness had not marked the whole of the different distances on the plans, asked Mr. Oliver several questions respecting the position of various places represented on the plans, and after some time so spent, the Judge said, "Are you capable of answering the question?"

Mr. Oliver.—I am, my lord.

The Judge.—I do not think, sir, you have the capability to answer the questions, or you will not apply your mind to them.

Mr. Oliver having given some further measurements, the Judge said there seems to be nothing but back streets. There are no front streets, and there are no architects in the county.

An Architect.—And no judges of architects.

The Judge.—If people will not prepare their plans with ordinary care, I will not allow their expenses. Where is that highly intelligent architect? I advise him to learn to make a plan before he attempts to execute another.

In a third case of murder before his lordship, Mr. William Ground produced a plan of a public-house he had made, and in answer to the Judge he said he did not see blood on the plan marked, but the spot was pointed out by a policeman some months afterwards.

His Lordship said this illustrated what he had said on the previous day. He wished the different places and the distances between them marked; but, as a general rule for architects and surveyors, it was better not to indicate anything without certainty.

Mr. Edge, counsel for the prosecution.—There have been such severe comments made by judges here that all the solicitors are frightened.

The Judge.—If that is so it is necessary to repeat what I thought I had already expressed. It is not in every case that you want a plan. In the case where a plan is requisite it seems that you do not make any, or make one that you cannot understand. Something has been said about the Treasury not allowing expenses for plans. So far as I understand, there is no foundation for that. [The learned judge has been misinformed on this point. Sufficient expenses are not allowed.] The rule is this: When a matter is difficult and intricate, such as the South Shields murder, a plan is necessary, and must be made; but in a trial here the other day—the Darlington murder case—a series of plans were produced for which there was not the slightest necessity. It was the most absurd thing I ever heard of, that because the murder happened in Cleveland-street, some architect (Mr. William Hodgson, of Darlington) had been employed to make an elaborate plan of the elevations of all the houses in Cleveland-street. You might just as well have given us a plan of Tyne Dock, or something of that kind. It would be better for an architect, in making a plan, to confine himself to the plan, and not indicate the place where the murder was committed, as the knowledge of that can only be gained second-hand. If you put a trace of blood upon the plan an objection would be properly raised to the plan going before the jury, because it would be laying before the jury something that was told by the policeman. If the architect is prepared to say the distance from so and so, he may, but he cannot be allowed to say "that is where the blood was," and so give evidence indirectly of his plans. His Lordship, looking at the plan, "It is the old story, the kitchen is not marked here, nor anything else. Which is the kitchen? I really wish that when plans are made they were made in such a way that they would be of some slight use."

Mr. Ground (the architect).—I never heard of a kitchen being mentioned, or anything else.

The Judge.—Did you ever make a plan in your life before?

Mr. Ground.—Many a time.

The Judge.—I should think from the specimen before me that you never did. But this room? There is Livingstone's public-house, but which room is which?

Mr. Ground pointed out a certain place.

The Judge.—I wish you had put it on, then. Which is the room they must go through in order to go out?

Mr. Ground.—No room at all, you must go through the passage.

The Judge.—Then your plan is still more incomprehensible than ever, according to this, my good man. Which is the room you go into before you turn to the right and go into the open air?

Mr. Ground.—I do not know what it is used for. It is a storeroom, or a back kitchen, or a wash-house.

The Judge.—I knew as much as that—that it is a kitchen, or a wash-house, or something of that sort.

The above description of the judge's attack upon architects and surveyors conveys but a minute idea of the feeling expressed by the profession throughout the North of England on the subject, and it may perhaps be necessary to add that the evidence given by architects in eight charges of murder at the late Durham Assizes, added to other testimony, has left three men sentenced to death, and three others to fifteen years' penal servitude. The police will, for the future, experience great difficulty in procuring Durham architects to assist them with plans.

THE WANDSWORTH SURVEYORS AND THE ROAD CONTRACTORS.

Sir,—in your report, in last week's impression of the *Builder*, under the above heading, you state that Mr. Pocock, the surveyor engaged to examine the roads in Battersea and Wandsworth, reported that "on examination of the roads in question, he found that the contracts had been improperly carried out, both as regards the roadway and the kerbing." Now, sir, as regards the one road in Wandsworth upon which Mr. Pocock was instructed to report, that gentleman came to the conclusion that the "contract had been honestly and faithfully carried out"; therefore, you will perceive, that should this version of the matter go uncorrected, my character and reputation might be seriously injured thereby.

Whilst writing to you, I deem it my duty to inform you that at a meeting of the Board this day (22nd), upon a full review of the circumstances, it was decided to retain the services of the Clapham, Putney, and Wandsworth Surveyors. I trust that you will, with your usual impartiality, give this letter insertion in your next impression.

The Wandsworth Surveyor.

NATIONAL TRAINING SCHOOL FOR MUSIC.

The first stone of the proposed new building, in connexion with this undertaking, was laid by his Royal Highness the Duke of Edinburgh, on Thursday, the 18th inst.

The site of the school is on the west side of the Royal Albert Hall, and about 50 ft. distant from the western portico. Her Majesty's Commissioners for the Exhibition of 1851 have granted a lease of the ground necessary for the school for a period of ninety-nine years. The Royal Albert Hall supplies unrivalled accommodation for any large audiences in connexion with the training school. It will also provide a small theatre and some large rooms for library. It is therefore contemplated to connect the new building with the Albert Hall, by means of a bridge, and to have an arcade from the Kensington-road, giving a passage under cover to the school. The new building, devoted to twenty class-rooms, professors' rooms, and offices, has been designed by Lieut. H. H. Cole, R.E. The style is described as an English style of the seventeenth century, as may be seen at Longleat and Wollerton, with panels decorated with sgrafito work, designed by Mr. F. W. Moody. Mr. C. J. Freake will liberally cause the building to be erected at his own risk, by Mr. J. Waller, and he has offered the free use of the building to the school for five years.

When the school is built it will be under a committee of management, consisting of two members appointed by the Royal Commissioners for the Exhibition of 1851, two members appointed by the Council of the Royal Albert Hall, and three members appointed by the Council of the Society of Arts.

The Council propose to establish the school for a period of five years, and to obtain the public support for that period. At its expiration the Society of Arts hopes that the British empire will so recognise the utility of the institution that it may be engrafted upon the system of national education, and be made part and parcel of science and art instruction, directed by a minister of public education.

HEAVY GOVERNMENT FEES FROM CANDIDATES FOR THE INDIA PUBLIC WORKS.

Much dissatisfaction was expressed on Friday amongst the hands of the large mechanical engineers' firms in the metropolis, at the Government notification that candidates for direct appointments as assistant engineers for the Public Works Department in India would be required to pay the enormous fee of 40*l.* for admission to the competition—half to be returned to the successful candidates, and all forfeited to the unfortunate losers of appointments. At this competitive examination any man under twenty-four years of age, and who has been employed for not less than eight months as pupil or assistant to a civil or mechanical engineer, will be eligible to compete. The subjects of examination will consist of mathematics, natural and experimental sciences, engineering, &c. They will also be required to undergo an examination likely to occupy several weeks in practical work in the laboratory and practical surveying, drawing, designing, and estimating.

The examination will not be held until after next Eastertide, and in the meanwhile poor and working-men candidates will have time to urge upon Government how serious is the "forty-pound gate to enter" where the number of prizes are not likely to exceed twenty, and the blanks, perhaps, be hundreds. It will be seen, too, that the fortunate candidates will be further rewarded by having half their fee returned.

THE NEW GOODS WAREHOUSES AND STATION FOR THE MIDLAND COMPANY AT WHITECROSS STREET.

For some time past the Midland Railway Company have been actively carrying out a policy in different parts of the Metropolis, having for its object the establishment of large goods and coal depôts in connexion with their system. The largest and most costly of these is the very extensive goods station and warehouses which are now in the course of construction on the site of Whitecross-street prison, which the Company purchased from the City authorities for upwards of 50,000*l.* about four years ago. This land, which is about three acres in extent, has been in course of excavation since the early part of the year, down to the level of the Metropolitan Railway, with the view of converting it into a spacious goods station to be approached from the Metropolitan line, over which the Midland Company have full running powers.

The area covered by the site extends from Whitecross-street, with a frontage of about 260 ft. in length, to a depth of 300 ft., where it is bounded by Redcross-street, the junction of the intended depôt with the Metropolitan line being on the south side between the Moorgate-street and Aldersgate-street stations. The heavy character of the preliminary work of excavation may be imagined when it is stated that the depth from the street-level to the bottom, upon which a bed of concrete is intended to rest, is 30 ft.; and the estimated quantity of earthwork to be removed is upwards of 80,000 cubic feet. The warehouses are to be erected on the east side of the site, with a frontage to Whitecross-street extending the entire length of the land, and they will be carried in the direction of Redcross-street to a depth of about 75 ft., thus covering a ground area of upwards of 2,000 square yards, or about one-fifth of the entire area of the depôt. The rest of the site, between the rear of the warehouses and the Redcross-street boundary, will be covered with metals for the goods-wagons, communicating by sidings with the Metropolitan line. The rails, however, will extend over the whole of the ground area, under the warehouses to the Whitecross-street frontage, the several floors of the warehouses being carried up on strong iron columns and wrought-iron girders, with hydraulic lifts from the ground-floor under the warehouses to the several floors above. With the view of preparing the foundations for the warehouses, the work of excavation, since the

commencement of the undertaking, has been directed in the first instance to the Whitecross-street side, and this portion has now been almost completed. The whole of the site, after being excavated to a depth of 4 ft. below the level of the Metropolitan Railway, is to have a foundation of concrete of that depth, so as to bring it up to the level of the Metropolitan line, and a considerable portion of the basement over which the warehouses will be erected has already so been laid with concrete, and is ready to receive the superstructure, which will be proceeded with in a few weeks.

As regards the warehouses themselves, it may be stated that they will be an unusually lofty block, being 80 ft. in height, and consisting of six stories above the railway level of the station. They will be built of red brick, with dressings in Portland stone, and will in every respect be of the most substantial character. Iron columns, resting upon the basement columns already named (3 ft. in diameter), will carry each floor to the top of the building, and all the floors will be strictly fireproof. There will be entrances to the warehouses in Whitecross-street, as well as from the rear of the building on the railway low-level. Messrs. Mansbridge, of Camden-town, are the contractors for these extensive works, which, it is said, will take about two years from the present time to complete, and we understand that the contract amounts to upwards of 130,000*l.*

The above are not the only works of a like character in which this enterprising company are engaged in the metropolis. About two years ago they expended upwards of 40,000*l.* in the construction of an extensive coal depôt at Walworth, adjoining the London, Chatham, and Dover Railway, upwards of four acres in extent, and they are now about to extend it to the boundary of Hanover-street, near the Elephant and Castle, to the extent of an additional two acres. The preliminary steps for this extension were taken last week by an application to the Newington vestry; and the land being already in their possession, the works are immediately to be commenced. In addition to this, the company have recently opened a coal depôt, four acres in extent, at Wandsworth; and are about to erect goods warehouses and other buildings adjoining, upon a portion of an additional six acres of land which they have already secured.

GLAZES.

SIR,—Will one of your correspondents inform me what kind of ingredients I should use to glaze yellow tiles with? The nearest I can find are equal quantities of red lead, antimony, and borax. J. F.

COMPENSATION CASE: THAMES EMBANKMENT.

IN the Sheriffs' Court, Red Lion-square, before Mr. Under-Sheriff Burchell and a special jury, the case of Sir H. P. Gordon, bart., *v.* The Metropolitan Board of Works, has been tried.

This was a claim by Sir Henry Percy Gordon for injury done to his residential estate at Chelsea, near the hospital, by which his water frontage had been cut up, and his privacy intruded upon by the works of the Thames Embankment. The claim as made was 3,000*l.*

Evidence was given on both sides, and the surveyors disagreed. The rental was put at 500*l.* a year on one side and at 270*l.* on the other. The embankment would injure the residence, it was said by one party; and the theory on the other side was that it would improve the property.

The jury, after a long investigation, gave a verdict for 450*l.* A much larger sum had been offered before the trial.

MOULDED AND MORTISED BRICKS.

MESSRS. L. DE FONTAINEMOREAU & CO., Patent Agents, have forwarded us drawings of some improved bricks and tiles, patented by M. Gaillon, of Paris. The patent consists in forming the bricks or blocks with mortises and tenons or dovetails, and of the required shape, so that they shall fit into and be joined to one another, and so dispense with mortar or cement to produce the required design of a house or other building to be constructed. The bricks are further connected together by iron work of suitable construction, by which but little wood is required in such structures, and a great economy, it is claimed, is effected in labour and materials.

The patentee proposes to form cornices and entablatures of bricks or blocks with mortises and tenons, and with the required moulding on the outer face, and with channels on their upper faces, so that when put together and united by iron ties (passed through suitable openings left in the blocks for that purpose), a gutter will be formed with a proper fall, thus dispensing with wood and lead as usually employed.

Window and door frames, with the required boxes for weights, rabbits, and grooves, with mouldings and architraves round, may also be made. Mantelpieces can also be built up by employing these improved materials, and can be afterwards enamelled or painted.

SCHOOL BOARDS.

Goole New Board Schools.—The design by Mr. William Watson, architect, of Doncaster, and of Wakefield, has been chosen by the Board out of ten designs submitted in competition by nine competitors. The buildings will be Gothic in style, and consist of schools for 600 children, and teachers' residence, and the cost is estimated at about 3,500*l.*

Driffield.—The subject of the proceedings of the contractors of the new schools was again brought before the Board. Mr. Paul, the architect, had been over, and had given notice to the contractors that unless they proceeded with their work more satisfactorily, he should advise the Board to take the works into their own hands, for there was no prospect of their being completed by the time required by the Board. Instead of being ready by Christmas, it was more likely to be next Lady Day before the works were finished. A long discussion ensued respecting the contractors having used Scotch fir blocks in laying the floors, instead of larch blocks, as required by the specification. The Board expressed a determination that there should be no departure in this respect from the requirements of the contract, which, as representing the ratepayers, they were bound to see carried out. A letter was read from the architect to the clerk of the works in reference to the failure of the contractors in carrying out the contract,—that the clerk of the works was to exercise his own judgment, and act accordingly. This the Board thought was a very extraordinary letter to have been sent by an architect to a clerk of works on his representing a departure by the contractors from the specification. The meeting was adjourned to allow time for a report from the architect on the necessity of taking measures for the completion of the works, and deciding what course should be adopted in dealing with the contractors.

SCHOOL BOARD SCHOOLS, HUDDERSFIELD.

THE foundation stone of Stile Common Board School, Hudderfield, has been laid. This building, when completed, will be a plain Gothic one, built of pitched-faced wall-stones, 20 in., and lined inside with brickwork 5 in. thick. The windows and doors will be of sandstone dressings, and the school will be roofed with plain red Staffordshire tiles.

It will have a frontage of 213 ft. 4 in.; a depth from back to front of 116 ft. 8 in., and will stand in an enclosed area of 7,261 square yards. The boys' school will be 70 ft. long by 22 ft. wide, and will have three class-rooms, 22 ft. by 18 ft. 9 in.; a lavatory of 21 ft. by 13 ft.; and a teachers' room, 13 ft. 9 in. by 9 ft. The girls' school will be precisely similar to the boys'. The infants' school will be 50 ft. by 25 ft, and will contain one class-room, 22 ft. by 20 ft.; two class-rooms, 20 ft. by 19 ft.; a kind of lavatory, 20 ft. by 12 ft. 7 in.; and a teachers' room, 11 ft. 7 in. by 9 ft. One of these three distinct departments will accommodate 250 boys, another 250 girls, and one for 300 infants, making a total accommodation for 800 children. Each of these departments will have a separate playground. The estimated cost of the building when completed, will be 7,260*l.*, distributed as follows:—Tenders, 6,200*l.*; fittings, 400*l.*; architect's commission, and other expenses, 360*l.*; contingencies, 300*l.* The school and the playground will cover an acre and a half.

The Huddersfield School Board have either built, or have in contemplation, thirteen new schools,—one in Almondbury, which will accommodate 412 children; the second in Beaumont-street, or Fizwilliam-street, which will accommodate 845 children; the third at Berry Brow, for 350; the fourth at Birchincliffe, for 150; the fifth at Crosland Moor, for 120; the sixth at Deighton, for 150; the seventh at Moldgreen, for 1,080; the eighth at Mount Pleasant, for 1,062; the ninth at Oakes, for 800; the tenth at Outcote Bank, for 230; the eleventh at Salendine Nook, for 100; the twelfth at Spring-street, for 67; and the thirteenth, the foundation stone of which was now laid, for 800. These collectively give a total accommodation for 6,166 children. The estimated cost of these schools will be 69,578*l.*, involving an annual repayment of 3,027*l.* 3*s.* 9*d.*, or 4*l.* 7*s.* per cent., for a period of fifty years. Besides these schools, they have one in Spring-street, at present accommodating 150 children, and a second at Outcote-bank, for 460 children, which has been handed over to the School Board. They have a third school at Crosland Moor for 314 children, and a fourth at Hillhouse for 297 children, the two latter of which they regard as more of a permanent character than those at Lockwood. These four schools give accommodation for 1,221 children, and when these others are completed there will be accommodation for 7,387 children.

THE LEICESTER SQUARE IMPROVEMENT.

FROM the decision just given by the Master of the Rolls, it results that the vacant space in Leicester-square is not to be built over, but will be retained as open ground for the purposes of ornament and recreation. His Lordship stated that there had been more litigation over this square than any other square in Europe. A plan of the proposed improvements which the Metropolitan Board of Works hopes to effect by the powers of the Act of Parliament to be asked for in the ensuing session has been deposited in the usual manner with the Clerk of the Peace for the county of Middlesex, together with a book of reference to the plan, &c. The notice accompanying the plan states that the Board asks for powers to provide for the transferring and vesting in it of the garden of the square, to extinguish all existing rights, and, if necessary, to acquire all estates, rights, and interests in it compulsorily; to enable the Board to regulate and use the garden, and to lay it out, drain, plant, and ornament it; to make bye-laws and regulations for its government, management, and improvement, for preserving good conduct and good order, and preventing nuisances and annoyances in it; and to vary and extinguish all rights and privileges which would interfere with any of these objects. At the last meeting of the Board the Parliamentary Committee reported that they had prepared the Bill for the acquisition o Leicester-square, and proposed to apply to Parliament to set aside the standing orders in order that it might be introduced during next session. The Board, after purchasing the square, will be able to deal with the railway company which has power to pass under it in the same way as the present owner.

SCHOOLS OF ART AND OF SCIENCE.

St. Martin's School of Art, London.—The annual distribution of the prizes gained by the students of this school took place in the school-building, Castle-street, Long-acre, in the presence of a large assemblage of visitors. Mr. R. Redgrave, R.A., presided, and gave an introductory address, expressing his satisfaction with the efforts of the students, at the favourable position of the school as compared with others connected with the Science and Art Department. The prizes, which included several presented by the Plasterers' Company, were then distributed by the chairman, the most distinguished of the prize-winners being Miss Cornelisen, Mr. Seymour Lucas, and Mr. George Jupp, to each of whom was awarded the bronze medal. Mr. H. S. Marks, A.R.A., then addressed the students on the subject of art, giving them many valuable hints and a good deal of sound practical advice. Lord Francis Hervey subsequently made a few observations upon the same topic; and during the remainder of the evening a selection of music was performed by the students and friends.

Bristol School of Science and Art.—The prizes and certificates awarded by the Scieace and Art Department, at the last examination, to the students of this school were distributed, at the Fine Arts Academy, Queen's-road. The Mayor (Mr. T. Barnes) presided over a large attendance. From the annual report it appeared that the debt of 655*l.* on the institution had been reduced to 25*l.* The committee, however, lamented the smallness of the subscription-list, which amounted to only about 35*l.* a year. The report went on,—

"The results of 1873, as compared with those for 1868, the first year of Mr. J. Nicol Smith's head-mastership of this school, are highly satisfactory. Results for 1868:—

2nd grade, 111 exercises passed by 82 students, 16 prizes, and 7 full certificates; 3rd grade—12 prizes, 5 honourable mentions, 19 works selected for national competition. 1873:—2nd grade—143 exercises by 102 students, 28 prizes, and 16 full certificates; 3rd grade—24 prizes, 15 works selected for national competition, 5 free studentships, 1 National Queen's prize. This increase has necessitated an extension of the school accommodation, and it is proposed, as speedily as possible, to undertake the erection of enlarged and additional class-rooms, towards which your committee hope to receive such a substantial grant from the Science and Art Department as will, they trust, enable them to complete their alterations without any application to the public for contributions to the building. At the same time they venture to express their earnest hope that their present appeal for new subscriptions will not be made in vain." It was resolved,—

"That this meeting recognises the great work being done by the Bristol School of Science and Art, commends it very strongly to the citizens and manufacturers of Bristol, and invites their support towards raising the amount of its subscriptions to at least 100*l.* per annum."

Leicester School of Art.—The annual meeting of this school and distribution of prizes took place in the lecture-room of the museum. The chair was occupied by Mr. A. Pell, M.P., who delivered the prizes, and the room was crowded to excess, many people being unable to obtain admission. A large number of the works of the students were exhibited on the walls of the room, and were inspected by the audience. In course of the proceedings Mr. Pilsbury, the head master, read his report, which stated that the school has been quite as successful as ever. He says:—

"I find that out of the total of 260 students, upwards of 150 belonged to the artizan class.

The total number of works executed during the year and sent for examination to the Science and Art Department, was 1,094. Last year the total was 1,448. This decrease is attributable to the advance of the students to the higher stages, in which more time is required to execute the works.

Although the works were less numerous this year than in either of the previous years, we have gained more prizes for them.

I am glad that the complaint which the examiners made last year respecting the want of a more concentrated force of light on the objects of study, as shown by the students' works, has not been repeated this year, and that we are informed that 'the drawings show a marked improvement.' But the unsuitableness of the present building continues to be very detrimental to our progress, and it is exceedingly difficult to place the casts and other objects in a proper light. This difficulty increases as the students advance to the higher stages, and require more casts and objects arranged to study from.

The antique-room and space allotted to the advanced work in the evening class, will also soon be too small for the increasing number who are passing from drawing from flat examples to working from the round.

I need scarcely say that the position of the school in relation to the other art schools in the kingdom depends greatly upon the character of the works in the higher stages, and that this advanced work will exercise the greatest influence upon the industrial art of this town. It is, therefore, important that every obstacle be removed which discourages the students and retards the progress of those who, having passed through the elementary stages, have arrived at the more advanced branches of study.

The requisite space and proper lighting cannot be obtained in the present building, and I trust that one specially designed for the purposes of a School of Art will speedily be provided."

Mr. Pell attributed the deficiency in the taste for art in such towns as Leicester to the unequal increase in the population, and to the fact that there was less art in making a stocking than in designing of patterns for Nottingham lace, Birmingham toys or jewelry, or Coventry ribbons. He advised all students of art to avoid novelty, or what was termed "originality," especially those of a mechanical turn of mind. When travelling in Staffordshire recently, he endeavoured to ascertain why we had in England such a number of ugly jugs that it required something good inside them to make them tolerably pleasant. The explanation he received was that the new patterns were brought out by the smallest masters, and that they brought out a new design every year. This was dangerous, and must end in unsatisfactory results.

York School of Art.—The annual meeting of the subscribers and friends of this school was held at the Institution, Minster-yard. There was a numerous attendance. Major York occupied the chair, and distributed the prizes. Amongst others, Mr. Dominy, the master of the school, addressed the subscribers and the students present. Having thanked the former for their generous support of the school, and congratulated them on its improved financial condition, he spoke of the work done in the various classes during the past year. On the whole, this was highly encouraging. Many students had passed their examination very creditably, and had done well. Speaking of the various ways in which a thorough and practical knowledge of art was of great service to its possessors, reference was made to ornament in manufactures, which as a branch of study he should like to see carried out more in that institution. He was perfectly aware that there were, comparatively speaking, very few manufactories in this city, and hence not that encouragement and incentive to this special branch as in larger towns; but he was glad to say that a start was made during the past year, and he hoped this course of study would be continued, and produce better results next year. At some length Mr. Dominy alluded to the preference on the part of many of the students for what he might term showy work, rather than the more artistic kinds, and those which were of more intrinsic and permanent benefit. He spoke of the growing interest in art, its elevating influence, the necessity of patient and thorough application, and the importance of scientific and correct art instruction. To the students he gave much valuable advice.

Walsall School of Science and Art.—The annual meeting of the Walsall Science and Art Institute took place at the Tantarra-street Board School, the president, Mr. C. Forster, M.P. for the borough, and who distributed the prizes, in the chair. There was a good attendance of students and friends. The report, after acknowledging the efforts of Mr. Forster to bring about an amalgamation of the different institutions of the town,—efforts which ultimately proved successful,—went on to state that the committee commenced its labours in the rooms above the railway station, in October, 1872, with five classes in art studies, for the absolutely elementary and the more advanced; and six classes in science, viz., physical geography, animal physiology, electricity and magnetism, acoustics, light and heat, geology, and chemistry. Owing to the amalgamation having taken place late in the session, many students were prevented joining; but, nevertheless, there were passed by the Government examiners forty-six students in art, and fifty-one in science, winning twenty-six Queen's prizes, and two honourable certificates,—a success of which all concerned might be justly proud, excelling, as it did, most other institutes of like proportions. At the present time there were sixty-three students in the art classes, being an increase of seventeen, who were taught by an experienced teacher, Mr. A. Mulligan, and his assistant, Mr. A. Mills. In the science classes, there were ninety-four students, being an increase of fifty-nine, who were taught by Mr. Turner and his assistants. It was intended to take for use the rooms above the station, at present occupied by the Working Men's Club, and use them in addition to those now occupied by the institute; and it was also proposed to fit up a laboratory, and provide apparatus for the study of electricity and magnetism. The financial condition of the institute was not unsatisfactory, but its extended operations would render increased funds necessary, and those funds, the committee felt sure, the town would be willing to supply.

Derby Central School of Art.—The annual distribution of prizes and certificates to the successful students of this school, took place in the Lecture Hall, Wardwick, the presentation being made by the Right Hon. Lord Vernon, the president of the school, who occupied the chair. The attendance of the general public was very good, both the body of the hall and the gallery being well filled. The head master (Mr. Simmonds) read a statement, in which he said: It is very satisfactory to be able to state that there has been a continual increase in the number of students from the time the school was first opened until March last, when, I regret to state, it was necessary to close the registers and refuse admission to all other applicants, in consequence of the space in the rooms being totally inadequate to the demand. This course was not adopted till the rooms were so crowded that the studies were much interrupted, and, in many cases, in the advanced work all chance of success entirely prevented. After the registers were closed a large number of applicants were received. If it be reported that the premises are unsuitable the Government aid will be liable to be partially or entirely withdrawn. Therefore it is evident, that unless speedy measures be taken to provide something like the accommodation afforded in neighbouring towns, the school will be unable to maintain its position, even should it not cease to exist. Finally, I would urge the gentlemen of this committee to make an effort to uphold a school that has accomplished in the time more than any school of art in the kingdom.

History of Jewish Coinage.—The book on this subject recently quoted by us is by *Mr.* Frederick Madden, not his father, the late "Sir Frederick," as stated.

CHURCH-BUILDING NEWS.

Torquay (Devon).—The formal celebration of the completion of the rebuilding of the parish church and tower of St. Marychurch, Torquay, has taken place. The undertaking has cost 14,250*l.*

Nibley.—The parish church of St. Martin, North Nibley, has been re-opened. Three windows have been restored in the south aisle, and filled with cathedral glass; and one in the east end is a completely new one, the upper tracery is filled in with stained glass, with the words, "Holy, Holy, Holy, Lord God of Hosts." These were executed by Mr. Blandford, builder, and Mr. Garn, glazier, both of Dursley. The east chancel window has also been filled with stained glass, wrought by Messrs. Bell & Son. The window, of Gothic design and in three divisions, contains nine subjects in our Saviour's life, viz.:—"I am sent to my Father," "And to your Father," "And to My God and your God," "Feed My Sheep," "And He took Bread" (this forming the centre subject), "Abide with Me," "Touch Me not," "Be not Faithless," "They ran both of them together."

Pulham.—The Church of Pulham St. Mary Magdalene, Norfolk, consists of a nave and aisles, tower, and north porch, of the time of Henry VII., whilst the chancel is of the earlier or Decorated period, or about the time of Edward II. The roofs, all of which are figured in Brandon's "Open Timber Roofs," have now been restored, every portion of the old timbers, as far as they were sound, having been left as they were, and all necessary new pieces have been reinstated in oak, moulded like the old, but left in their new wood, without stain or varnish, so as to show exactly what is original and what is not. The nave and chancel roofs have been covered with green slates, and the aisles with lead, as before. The eastern bay of the nave-roof had been highly decorated in distemper, but time had to a great extent obliterated it. It formerly consisted of angels and cherubs and monograms of the name of our Saviour and St. Mary, and ornaments in red, green, gold, white, and other tints. There was sufficient left to enable the artist to exactly recopy the old, which has been done by Mr. King, of Norwich. The east window was a very debased post-Reformation work. A new three-light Early Geometrical window has been put in its place, and filled with stained glass, by Heaton, Butler, & Bayne, representing, in the centre light, the Crucifixion, with Mary kneeling at the foot of the cross; on the left-hand, Mary Magdalene washing the Saviour's feet; and on the right, Mary telling the Apostles she had seen the Lord after His death. The side windows in the chancel are also filled with stained glass by the same firm, and consist of emblems of our Saviour, St. Mary Magdalene, St. Mary the Virgin, and other devices. The chancel is benched with oak carved benches, of the Early Decorated character, the floor being laid with Minton's encaustic tiles, that within the altar-rails containing emblems of our Saviour, the four Evangelists, the cup, &c.; and outside, the letter M, for St. Mary Magdalene, and other devices. A new vestry and organ-chamber have been built on the north side, opening into the chancel and north aisle, with stone arches, filled in with oak screens. The clearstory and south-aisle windows are glazed with cathedral glass, the walls having been re-stuccoed, and the floor laid (where the seating should be) with wood, and the passages of the nave and aisles with the old monuments and paving. The whole of the doors, both north, south, and west end, and vestry, are of moulded oak, the hinges and fastenings being of wrought iron, made from special designs by the architect, Mr. R. M. Phipson. The church is warmed by apparatus supplied by Haden & Sons, of Trowbridge. The general contractors for the works are Mr. Vine, of Eye, and Mr. Grimwood, of Weybread. The organ has been repaired by Mr. Rayson, of Ipswich. It now occupies a chamber at the east end of the north aisle, and its outward appearance has been brought into harmony with the restored interior of the church.

Cheltenham.—The committee appointed some time ago to consider the best means of increasing the church accommodation of the parish have issued an appeal from the pen of the rector, Canon Bell. It is of a twofold character. First, the committee ask the inhabitants to complete the restoration of old St. Mary's Church. To properly restore the building 4,000*l.* will be required. Secondly, funds are asked to erect a new church, capable of holding the presen

large congregation of the temporary church. To do this 14,000*l.* or 15,000*l.* are needed.

Liverpool.—St. Margaret's Church, Anfield, has been consecrated. It occupies, says the local *Journal*, a prominent site at the corner of Belmont-road and West Derby-road, within the township of Anfield. It has been erected from designs by Messrs. W. & G. Audsley, of Liverpool, and is of the early French style of architecture, freely rendered, so as to harmonise with the treatment demanded by the materials employed in the structure. It is constructed of local grey bricks, relieved with the sparing introduction of red and black bricks in the arches, bands, and cornices, the finishings being of Storeton stone, Yorkshire stone, and polished red granite. Externally the design is of great simplicity, little ornament being applied except in the west façade and south porch. The general features of the design are a long nave with narthex and lateral aisles, an apsidal chancel, north and south transepts, and a centre tower, gabled east and west, and roofed in the saddle-back form. The west portal is large and deeply recessed, with jambs set with nook shafts, and alternating arches of red brick and carved stonework; within these are set double doorways, divided by grouped shafts of polished red granite, and surmounted with a moulded and carved tympanum, enriched with sculptures of our Lord in glory, and adoring angels. The south quasi-transept, or limb of the narthex, is used as the principal entrance-porch, having a double doorway, with scenes from the life and martyrdom of St. Margaret sculptured in the tympanum, and a full-length figure of the saint, as depicted in Christian art, in a centre niche above. The treatment of the remainder of the exterior is simple. The interior of the church consists of a western narthex, a nave with lateral aisles, a choir space at the crossing, north and south transepts, and a spacious chancel. The nave is 100 ft. long, with its aisles 61 ft. wide, and 60 ft. high to the ridge-rib of the wagon ceiling. The western end is crossed with the narthex, composed of quasi-transepts, which open into the nave by arches 36 ft. high, and into the aisles by lesser arches. The southern limb of the narthex is used as the entrance vestibule, and the northern as the baptistery. The ceiling of the former is decorated with devices containing the monogram of the patron saint, and the latter is illuminated in gold and colours, the designs having allusion to baptism. The font, which is placed in the centre of the baptistery, is of large size and elaborate workmanship; it is of square shape, and consists of a carved Caen stone basin, with capping and inlays of coloured marbles, supported on four square and sixteen circular columns of red and green marble, with carved capitals and bases. The whole stands on a base of three steps. The ceiling of the nave is of a wagon form, and painted throughout in gold and colours. The ceilings of the side aisles are also decorated in gold and colours. Over the western doors is a painting of the Adoration of the Magi, extending the whole width of the nave; it is the work of Messrs. Heaton, Butler, & Bayne. The nave is seated with low open benches of pitch pine, and warmed, along with the rest of the church, with hot-water pipes. The choir is placed under the tower at the crossing of the transepts, and opens into the nave, chancel, and transepts by four arches 50 ft. high. The pulpit, which is of Caen stone and marble, is placed on the left of the screen and against the north-west pier of the tower. In the north transept is erected the organ, a work of Messrs. W. Hill & Son, with its principal front across the tower arch and its secondary front in the transept arch towards the nave. The ceilings of both transepts are decorated in colours. The width of the church across the transepts is 70 ft. The chancel is of an apsidal form, 25 ft. wide and 30 ft. long. The reredos is of marble and Caen stone, and contains three sculptured groups of the Agony, the Crucifixion, and the Ascension divided by columns and surmounted by pedimented arches. At each end, and between the arches, are four angels bearing inscribed scrolls. The whole terminates at the height of about 16 ft. with a cross and dove. The altar is of black oak relieved with gold and colours.

Walsall.—The foundation-stone of the new district Church of St. George, Walsall, has been laid by Lady Hatherton. The design is in the Early Decorated style, the outer walling being of limestone, with Penkridge stone dressings, and consists of nave, 90 ft. 9 in. by 29 ft. 6 in.; chancel, 40 ft. 6 in. by 20 ft.; vestry and choir-vestry, and organ-chamber. There will be a porch on the north and south sides of the church, and above the former will rise the steeple, which will be 168 ft. high, or 3 ft. higher than that of the parish church. The roof will be an open-timbered one, and the fittings of pitch pine. Owing to the formation of the ground, the floor will incline from west to east to the height of 3 ft. The floor will be laid with encaustic tiles, and the church will be heated with hot water. The cost of the whole building, it is estimated, will be about 10,000*l.*; but at present the nave and aisles only will be erected, at a cost of between 5,000*l.* and 6,000*l.*, but this will include the foundations for the whole structure. The erection of the steeple will not be entered upon until the other portions of the building are finished. The architect is Mr. R. Griffiths, county surveyor, Stafford, builder, Mr. James Adkins, Walsall; and clerk of the works, Mr. J. Adkins, jun.

DISSENTING CHURCH-BUILDING NEWS.

Bridlington.—The foundation-stone of a Baptist chapel, to be erected on the west side of the Quay-road, has been laid. The style is Gothic, and the building will be of white brick, with ornamental stone, with a tower on the south side and at the east end of the chapel. It is intended to accommodate 500 people, having a gallery over the entrance at the east end, and an orchestra behind the pulpit at the west end; also a schoolroom and vestry on the west of the chapel. The building will cost over 3,000*l.*, towards which the building committee have received, in donations and promises, 1,000*l.* Mr. Musgrave, jun., of Hull, is the architect; and Mr. John Rennard, of Bridlington Quay, the contractor.

Frodsham.—A new Wesleyan chapel has been opened for divine worship at Frodsham. The chapel is the gift of Mr. Thomas Hazlehurst, of Prospect-villa, Runcorn, and has been presented to the Wesleyan Conference, complete with the internal fixtures, and free from debt, at a cost of 7,000*l.* The land, which cost 600*l.*, was the gift of Mr. Charles Hazelhurst. The minister's house, which is close to the chapel, has been erected by the congregation and other friends of the cause. The style of architecture is Gothic, freely treated, local stone being used throughout, from the quarries of the Marquis of Cholmondeley, by whom it was supplied at a nominal cost. The spire is 120 ft. in height, and of the broach description, with canopied windows on the four sides, and surmounted by the usual vane. The upper part of the tower, immediately below the spire, is finished with a recessed window and an arcade below, with polished granite shafts. A smaller arcade, but richer in detail, has been added to each side of the main entrance; this is ornamented with polished granite shafts. The chapel faces Main-street, and thus occupies a prominent position. The grounds within the gateway are laid out and cultivated. The architect is Mr. C. O. Ellison, of Liverpool. The building is constructed to accommodate 600 persons. The seats are open, and of pitch-pine, the entrance to the body of the chapel being by two doors from the main entrance, and two on either side of the communion rails, at the other end. There is a spacious gallery on three sides. The effect of the communion enclosure is maintained by an arch, moulded, and with polished granite clustered columns, the lower portion being filled in with a pitch-pine screen, with polished brass shafts and carved capitals and ornamental glass panels. The pulpit is of pitch-pine, with ebony shafts, traceried panels and side panels, inlaid with black. The font is the gift of the architect, and is in hammered brass and copper jewelled; it stands immediately over the centre of the handrail, and bears this inscription:—"Presented to Trinity Chapel, Frodsham, by its architect, C. O. Ellison, Liverpool, Nov. 6th, 1873." The gallery-front, the wall-hoarding, and the framing of the aisles, are finished with long narrow panels along the tops, filled in with ornamental perforations, with crimson cloth at the back. The pillars which support the gallery are moulded, and from them lighter columns ascend to support the roof-timbers, which ride from the caps of the upper columns in every direction. The ceiling is filled in with diagonal pitch-pine boarding, with ornamental perforations in the centre, communicating with ventilating chambers between the ceiling and the roof. The windows of the chapel are the work of Messrs. Holloway, glass contractors, Liverpool. They are traceried in stonework, the heads being filled in with painted glass of varied design and colour. The ornamental effect is carried down the windows by borders and panes. The pillars are decorated in gold colour, to match the organ front. The decorative work has been carried out by Messrs. Chandley, of Warrington. The gas-fittings are by Messrs. Brawn & Downing, of Birmingham, and are constructed of hammered brass and iron, in colours. A ten-light corona is suspended between each column, and five-light brackets from the walls under the gallery. The heating properties of the chapel are afforded by apparatus supplied by Messrs. Trusswell & Co., of Sheffield. The organ was built by Mr. Wadsworth, of Manchester, at a cost of 400*l.* The front of the instrument is divided into three bays, the pipes being of metal, wood, and reed, and is enclosed in a pitch-pine case, with ebony shafts and ebony mouldings in gold and black. The centre pipes are gilded on colour, and the side pipes coloured on gold. The organ is placed in front of the congregation, behind the pulpit, in a gallery erected for the purpose. A Sunday-school has been erected at the back of the chapel, and is completely fitted for week-night services. A fault, however, in the construction of this building appears to be its deficiency of light, which is afforded by low windows of stained and glazed glass. There are three vestries connected with the chapel. The house of the minister is of plain construction, without any features of attraction, and built of red stone. The builders were Messrs. White & Son, of Runcorn; the mason, Mr. Charles Holland, of Chester.

Biggleswade.—The chief stone of a new Primitive Methodist chapel has been laid. The plans and specifications were prepared by Mr. Thos. Handley, of this town, architect, according to the *Bedfordshire Times*, which states that the new chapel will be in the Gothic style, will accommodate about 300 persons, and be so constructed that a gallery (if needed) may be added. The estimated cost is about 560*l.*

Belgrave (*Leicester*).—The memorial-stone of a new Nonconformist Church has been laid at Belgrave. The building is intended to seat 500 persons, 400 on the ground-floor and 100 in an end gallery. It is roofed in one span, and has a light projection on each side, and also a recess behind the Communion platform, which is occupied by the baptistery. Behind the chapel, and on the same level with it, are two vestries and a ladies' retiring-room. A staircase adjoining these rooms leads to the lower story, which is arranged to contain a schoolroom for 300 children, two senior class-rooms, an infant-school-room, a kitchen for tea-meetings, heating-chambers, and other conveniences. The levels of the ground are such as to admit of the basement being well lighted, and also of the school being approached from Vann-street, with only a small number of steps, while the chapel-floor above it is not an inconvenient height above the Leicester-road, towards which the main entrance fronts. The style of architecture is Early English Gothic, the material for the walling being red pressed-brick and Bath stone. The architect is Mr. Tait, of Leicester, whose design was chosen in competition; and the contract for the building has been taken by Mr. Billington, of Belgrave.

STAINED GLASS.

Miscellaneous.—Two double-light memorial windows have been lately placed in the chancel of the (R. C.) Church of Our Lady and St. Patrick, Oldham; the following subjects from the New Testament are arranged therein in medallions, three in each respective light, viz., Annunciation, Visitation, Flight into Egypt, Holy Family at Nazareth, Marriage Feast at Cana, Good Shepherd, Charge to St. Peter, Crucifixion, Resurrection, Ascension, and Descent of the Holy Ghost. The spaces between each medallion are filled up with patterns in grisaille inclosed by Early English borders. These windows are the gift of Mrs. Sophia Ainsworth, relict of Mr. John Lees Ainsworth, late of Bankside, Oldham. The execution on glass was by Mr. William Gardner, of the St. Helen's Stained Glass Works, after the cartoons of Mr. Casolani, of the same town. The same artists have likewise recently completed the following:—A double-light baptistery window for the same church, with the Baptism of Our Lord, and Christ Blessing Little Children, in large figures, the gift of Mr. G. Kighley; one

of the openings of a four-light window of Lady Chapel in the (R. C.) Conventual Church of St. Francis, West Gorton, with a representation in full-length figures of "the Immaculate Conception," and in a panel underneath Pius IX. defining that dogma; the remaining three lights to be subsequently filled in with other suitable subjects. A small lancet window in St. Wilfred's Church, Bedford-street, Hulme, with a figure of St. Margaret of Scotland under a canopy, erected by Mr. G. Kighley in memory of his deceased wife. Three aisle-windows, representing the Annunciation, Visitation, and Nativity, in large medallions on grisaille grounds and borders. Four lancets in St. Joseph's Chapel, and four in the Lady Chapel of St. Ann's Church, Ashton-under-Lyne, with full-length figures of saints.

Books Received.

Science Simplified. By Professor Pepper, late of the Polytechnic. Frederick Warne & Co., Bedford-street, Covent-garden.

Under this general heading, we have six interesting and useful little books by the popular lecturer on Science, Professor Pepper, respectively devoted to Heat, Light, Electricity, Pneumatics and Acoustics, Chemistry, and Magnetism. They all have numerous illustrations, are full of useful information pleasantly conveyed, and each can be separately obtained.

Miscellanea.

The Ventilation of Law Courts and other Public Buildings.—Mr. Justice Denman has refused to sit in the room provided by the Corporation of the City of London for the sittings of the Second Court at Guildhall. He found that the chamber was small, low in ceiling, hot with large fires, and poisoned with gas-smoke. In Leeds, says the *Yorkshire Post*, judges and jurors for a long time experienced all the ill effects of a similar state of things in the Assize Courts, and various plans have been tried, at much cost, with the object of bringing about an improvement. This has, with the approval of the corporation, been introduced by Mr. Martin Tobin:—

"To thoroughly ventilate the court without introducing currents of cold air that would be prejudicial to the health of those attending it, was the task Mr. Tobin set himself. What he did was to fix in the court a few tubes connected with the exterior of the building, and then, like a wise physician, leave Nature to work her own cure. The fresh air surrounding the hall dashes into the open mains, and, after coursing through the crypt, it pours into the court out of the tops of the tubes. By this means eight or ten streams of fresh air find their way into the apartment, and the various currents being higher than the heads of the great bulk of those attending the court, no inconvenience is felt. Each column of air rises to a considerable height, and then diffuses itself in the upper region of the court. The ventilation in the ceiling carries off the impurities, and the fresh air being constant in supply, the improved condition of the atmosphere is maintained."

Gas Explosion: prepare for Frost.—The millinery establishment of Mr. Garland, Westwell-street, Plymouth, was being opened by a porter, but on going into a room behind the shop, he perceived a strong smell of gas, and, calling for a pair of steps *and a light*, he mounted the steps, striking a match close to the gas pendant in the room. Immediately there was a terrific explosion, the window of the room being blown out, and the plate-glass front of the shop and the shutters blown across the street. All the articles in the room were burnt. The porter and three women were severely scorched, as also was another person. The cause of the gas escaping was, that on the previous evening the pendant was pulled down too far, and a large amount of gas was collected in the room during the night.——This is the time again to speak of the advisability of substituting Colza oil for water in hydraulic pendants to prevent accidents in frost. The pendant to which we have for several winters referred passed another winter in safety, and without any attention or addition whatever, since last winter, although it is very easy to replenish it with the oil, which gives no bad smell, and does not burst the pipe soldering, and so cause accidents in any degree of frost, as water is apt to do.

Housebreakers' Differences.—The following tenders have been delivered for the demolition of two cottages, Albion-hill, Ramsgate, for the Local Board:—

Buckley	£63 5 0
Smith & Son	49 7 6
Home	34 19 6
Green (accepted)	14 15 6

The Metropolitan Gas Question. — A numerous deputation from the vestry and inhabitants of Paddington attended at the last meeting of the Metropolitan Board of Works and presented a memorial upon the subject of the proposal made by the Imperial Gas Company to raise the price of gas supplied by them. The memorialists stated that the Gas Company possessed a monopoly for the supply of gas, and notwithstanding that they charged the maximum price allowed by Parliament for 14-candle gas, at 3s. 9d. per 1,000 ft., the memorialists had heard, with astonishment, that the company had given notice of its intention to apply to the Board of Trade to raise the price after the 1st of January next. The reason assigned—the high price of coal—was fallacious, inasmuch as the price of the residual products had very much increased. The deputation hoped the Board would use all the means at its command to oppose the application of the company. Mr. Roche said this was only the first of many memorials which would come in to the Board from all parts of the metropolis protesting against the proposed increase of price. The memorial was referred to the Works Committee for report and consideration.

The Clapham and Brixton Baths.—It is satisfactory to hear that the scheme for supplying with water, from an artesian well, the swimming-bath now nearly erected by this company in the Ferndale-road, Shepherd's-lane, Brixton, under the superintendence of Messrs. Fowler & Hill, architects, is in a fair way of being carried out. The managing director, Mr. A. T. Timewell writes to us as follows:—On the 26th of July last, the then Lord Mayor, Sir Sidney H. Waterlow, bart., laid the foundation-stone of the above-named building, and at the ceremony expressed his opinion that the company itself was formed for a praiseworthy object, and that he considered the financial success turned upon the manner in which we obtained our water supply. I have now great satisfaction in announcing that a well has been dug, and bored to a depth of 418 ft. 6 in., and that we have entered a substratum of water, which rises to within 83 ft. of the surface of the ground; and by all our trials, both by hand and steam-driving the last three weeks, we have been unable to lower the water in the least, although the pump has thrown at times upwards of 200,000 gallons without stopping.

Northallerton New Town-hall and Market Buildings.—This hall was to be opened on Monday with a grand concert. The new market-house is a building of brick and stone, erected from the designs of Messrs. Ross & Lamb, architects, Darlington. The basement is entirely occupied with cellarage. On the ground-floor are a covered market, with accommodation for the market-people, and seven shops. The first-floor contains the public hall, capable of seating about 600 people, and with dressing and cloak rooms attached. This hall will occasionally be used as a concert and ball room, and for theatrical performances. The ceiling, which is wagon-headed in form, is decorated in colours. At the back of the stage or platform is a semicircular recess, which, together with the form of the roof, aids the acoustic qualities of the room. The lighting and ventilation have also received attention.

Improvements in Brussels. — The new boulevard now in progress will, when completed, bear comparison with any of the Paris boulevards. The houses already erected are built in an expensive style, far surpassing any of the existing buildings in Brussels. The site of the new boulevard was formerly occupied by the River Senne, which has been covered in at a great expense, and after several years' labour, by Messrs. Waring Brothers, of London. A committee has been formed in Brussels for the purpose of giving a banquet, on the 10th of January, to M. Anspach, the burgomaster, in recognition of his services in connexion with the various recent improvements.

A New Church for Cardiff.—A meeting has been held in the Tredegarville Schoolroom, Cardiff, for the purpose of considering what steps should be taken for the erection of a new church in the district of St. John's. Tredegarville is a populous part of the town, adjoining Roath. The necessity of a new church there is very strongly felt in the neighbourhood. It was ultimately resolved to form a committee for the purpose of taking the necessary steps for the erection of a church.

The Mill Memorial.—At the last meeting of the Metropolitan Board of Works, a report was presented from the Works and General Purposes Committee, stating that the committee have considered the letter from Mr. W. T. Thornton and Mr. Arthur Arnold, Honorary Secretaries of the Executive Committee of the John Stuart Mill Memorial Fund, requesting permission to erect a statue of the late Mr. Mill at the western end of the gardens of the Victoria Embankment, near the Houses of Parliament, and requesting the assignment of a site for that purpose, and recommending that a site, to be hereafter determined upon, be granted, the design of the statue and pedestal to be subject to the approval of the Board. Mr. Newton moved the adoption of the report. He considered the Victoria Embankment a most appropriate place for the reception of statues of distinguished men. The motion was carried.

The New Pier at Blackfriars Bridge.—The stage which is to form the future place for embarkation and landing on and from the river steamboats at Blackfriars Bridge, has been placed in position, as well as the bridge which connects it with the platform leading to Bridge-street, Blackfriars. The landing-stage is of the improved pattern, such as those at Westminster and the Temple, consisting of a number of air-tight iron drums. Wooden houses for the accommodation of passengers and the officials of the Iron, Citizen, and Woolwich Steamboat Companies respectively are erected upon the stage. A light iron bridge, rising and falling with the tide, connects a stage with a fixed iron bridge, which leads up to the entrance of the pier, within a couple of yards of Blackfriars District (Underground) Railway Station. The pier has been opened for steamboat traffic.

Presentation to Mr. E. Dresser-Rogers. The vestry of the parish of Camberwell have presented an engrossed memorial to Mr. E. Dresser-Rogers, in recognition of his indefatigable services in opposing the South London Gas Bill, which, if it had passed, would have cost the ratepayers several thousands of pounds annually, and allowed the price of gas to be raised. Mr. Dresser-Rogers, in thanking the vestry for the compliment paid him, said he could safely state, as a member of the Metropolitan Board of Works, that the parish of Camberwell, at the present time, was particularly privileged with regard to the gas question, and that it might consider itself quite safe against any increase at present. He hoped, therefore that the vestry would give their moral support to the other parts of the metropolis in their endeavours to oppose any encroachment by the gas companies in raising the price of gas.

A Well-earned Gratuity.—The governor of Devonport borough gaol having, in addition to his ordinary duties during the past two years, designed and caused the prisoners to build a new wing for the prison without employing any free labour or extraneous assistance, the Devonport council have awarded him 100*l.*, with smaller amounts to other officers. The prison, crediting it to the ordinary value of the labour bestowed on the new wing, has not cost the borough one penny during three years, and so thoroughly are the prisoners kept to industrial pursuits, that for several years they have earned their own maintenance, and partly paid the salaries of the staff. The per-centage of recommittals to Devonport Gaol is unusually low.

A Diamond Saw.—The *American Manufacturer and Builder* speaks of a diamond saw in operation at the Exhibition of the American Institute. It is an ordinary reciprocating saw-machine; but diamonds form the cutting tools, in combination with the steel blade as a guide. The diamonds are set in "cutter blocks" at intervals upon the blade, and work horizontally as a true saw in the stone set beneath. But while an ordinary saw cuts on an average 1 ft. 3 in. of brown stone in a day, the diamond-saw will do as much in half an hour.

The New Street through the Charterhouse.—Dr. Middleton has applied to the Chancellor of the Diocese of London (Dr. Tristram), at the Consistorial Court, for a faculty or licence to take a portion of the churchyard of the Charterhouse, and to remove the bodies to another part. In order to make the new street from Bloomsbury to Shoreditch, it would be necessary to take part of the churchyard of the Charterhouse, and a faculty was required to appropriate a consecrated spot. The court granted the prayer of the applicants.

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